BX-800W

Fan-less Embedded System

User's Manual

Version 1.0a

Table of Contents

How to Use This Manual

How to Use This Manual

The manual describes how to configure your BX-800W system to meet various operating requirements. It is divided into four chapters, with each chapter addressing a basic concept and operation of Fan-less Embedded System.

Chapter 1: System Overview. Present what you have in the box and give you an overview of the product specifications and basic system architecture for this fan-less embedded system.

Chapter 2: System Installation. Show the definitions and locations of all the interfaces and describe a proper installation guide so that you can easily configure your system.

Chapter 3: BIOS Setup Information. Specify the meaning of each setup parameters, how to get advanced BIOS performance and update new BIOS. In addition, POST checkpoint list will give users some guidelines of trouble-shooting.

Chapter 4: Important Instructions. Indicate some instructions which must be carefully followed when the fan-less embedded system is used.

The content of this manual is subject to change without prior notice. These changes will be incorporated in new editions of the document. The vendor may make supplement or change in the products described in this document at any time.

Chapter 1
System Overview

1.1 Introduction

We, announces BX-800W, a high performance and low power intelligent Box PC. Powered by the 4th generation Intel® Core™ ULT (ultra low TDP) SoC (system on chip) processor (formerly codenamed Haswell), this system is an ideal fan-less controller for applications in digital signage, surveillance, image processing and machine automation industries.

The BX-800W is powerful but not power hungry; it utilizes the dual-core 4th generation Intel® Core™ processor with Intel® Turbo Boost Technology 2.0 (select CPU SKUs), Intel® Hyper-Threading Technology and Enhanced Intel SpeedStep® Technology. By adopting Intel's SoC platform, which integrates CPU and PCH into a BGA package, BX-800W is much smaller, sleeker and lighter compared to its previous generation. In addition, the elimination of the 2-chip platform enables a more effective thermal design for the BX-800W intelligent Box PC. Thanks to the highly reliable chassis with a thermally-enhanced ripple fin design, BX-800W can operate reliably in a temperature range from -20℃ to 55℃. Plus, combining anti-vibration and shock resistance attributes, the fan-less and rugged BX-800W excels in harsh environments.

BX-800W also offers clear and concise video and graphics capabilities because it takes full advantage of the 4th generation Intel® Core™ processor with integrated HD4400 graphics engine which outperforms its predecessor by over 20%. In addition to the built-in triple-display interfaces, two additional display devices are made available by our graphics modules; thus, it can support up to five display outputs by extended mode in the OS. Product reliability and stability are definitely uncompromised; BX-800W is rated IP40 and certified by industrial product quality tests, such as an anti-vibration test of up to 5Grms and an anti-shock test of 50G. Our BX-800W has proven itself to be a perfect solution for video/graphics-demanding and automation control systems.

The versatile BX-800W system supports many other important features, including up to 16GB of DDR3L memory, triple display with DVI-D, HDMI and Display Port, 5.1-CH audio and dual Intel® Gigabit Ethernet ports. It also offers rich compact I/O functions including 2 x SATA, 2 x USB 3.0, 2 x USB 2.0, 1 x 8bits GPIO and 6x COM ports. To enhance system flexibility, customers can further augment functions per their specific needs via two antenna interfaces and an onboard SIM card holder for WiFi or 3G/GPS module, and two mini PCIe sockets for expansion; one or more PCIe expansion cassettes can be offered by counterparts of BX-800W for hungry demand. A wide range of DC power input, 12V~24V, is accepted so that it can not only prevent the system from damage due to power input change, but also expands the application

fields of this Box PC to the automotive industry, for example. Last but not least, with wall and panel mounting design, the BX-800W provides a slim and small footprint Box PC weighing only 2 Kg that can fit anywhere easily, no matter if it's in the office or factory.

1.2 Check List

The BX-800W package should cover the following basic items:

- ✓ One BX-800W Fan-less Embedded System
- ✓ One 60W AC/DC Power Adapter DC-plug with screw
- ✓ One Wall Mount Kit
- ✓ Other Accessories

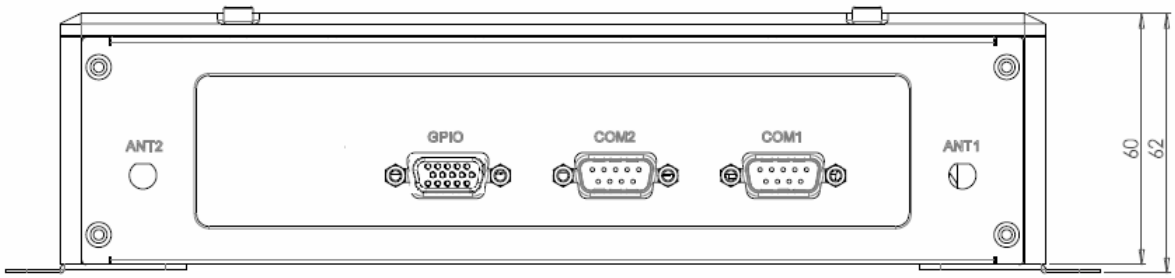
If any of these items is damaged or missing, please contact your vendor and keep all packing materials for future replacement and maintenance.

1.3 Product Specification

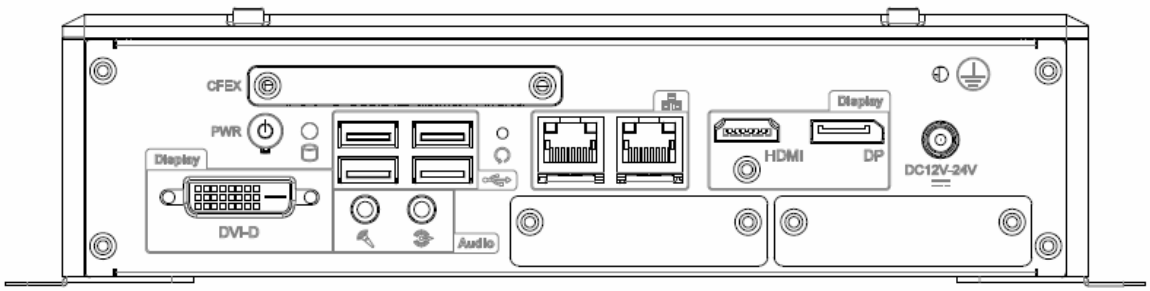
System	
System Chipset	Intel® Haswell ULT SoC
CPU	Intel® Core™ i7-4650U, 1.7GHz, 4M L2 Cache, up to 3.3GHz, 15W TDP (2C/4T) Intel® Core™ i5-4300U, 1.9GHz, 3M L2 Cache, up to 2.9GHz, 15W TDP (2C/4T) Intel® Core™ i3-4010U, 1.7GHz, 3M L2 Cache, 15W TDP (2C/4T) Intel® Celeron 2980U, 1.6GHz, 2M L2 Cache, 15W TDP (2C/2T)
BIOS	AMI uEFI BIOS (SPI ROM)
System Memory	Dual 204-pin SO-DIMM sockets support DDR3L 1333/1600 up to 16GB
Storage	1x 2.5" SATA HDD/SSD, 1x CFEX, 1x mSATA
Watchdog Timer	Programmable via S/W from 1 sec. to 255 sec.
H/W Status Monitor	-Temperature (CPU & System) -Voltage (CPU Vcore, VBAT, 5VSB, 12V, 5V, 3.3V)
Expansion	-1x Full-size Mini-PCIe socket (USB+PCIe) + SIM holder -1x Half-size Mini-PCIe socket (mSATA+PCIe)
External I/O	
Series Ports	2x COM Ports (1x RS-232/422/485 selectable by BIOS & 1x RS-232)
Display	1x DVI-D, 1x DP, 1x HDMI 2x Optional graphic modules (VGA/DVI-I/HDMI)
USB	2x USB 3.0, 2x USB 2.0
Audio	Lin-out/MIC-in (ALC892)
LAN	2x Gigabit Ethernet (Intel® WGI218LM + WGI210AT)

GPIO	1x Programmable 8-bit digital I/O
Other	-2x Antenna holes for WIFI or 3G/GPS module
Power Supply Unit	
Power Supply	DC 12~24V
Environment	
Operating Temperature	-20℃ to 55℃
Storage Temperature	-40℃ to 80℃
Relative Humidity	95% @ 40℃, non-condensing
Operating Vibration	5Grms/5~500Hz, IEC 60068-2-64
Operating Shock	50G, 11 msec, IEC 60068-2-27
Mechanical	
Dimension (WxDxH)	253 x 160 x 60 mm; 9.2″ x 6.2″ x 4″
Weight	2 kg
Mounting	Wall Mount

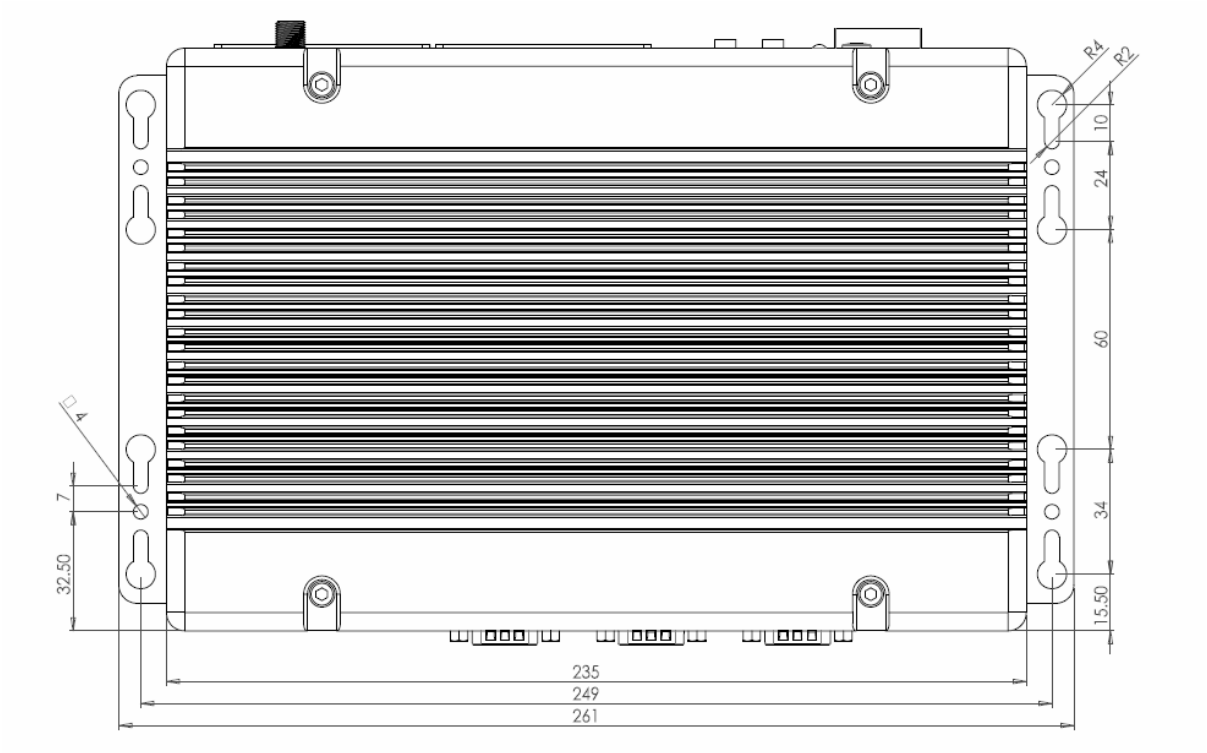
1.4 Mechanical Dimension



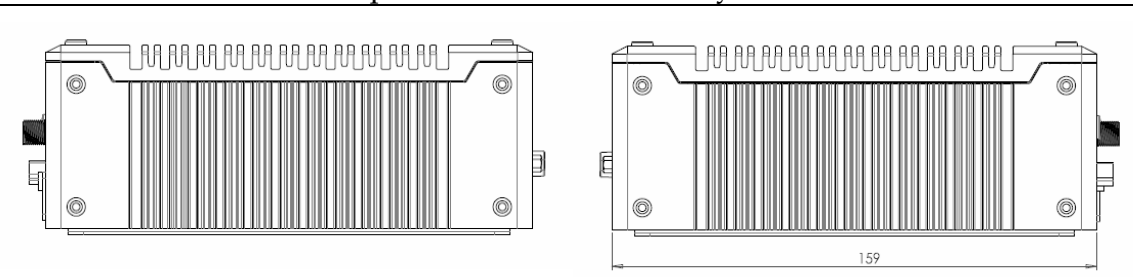
Front view of the BX-800W system



Rear view of the BX-800W system



Top view of the BX-800W system



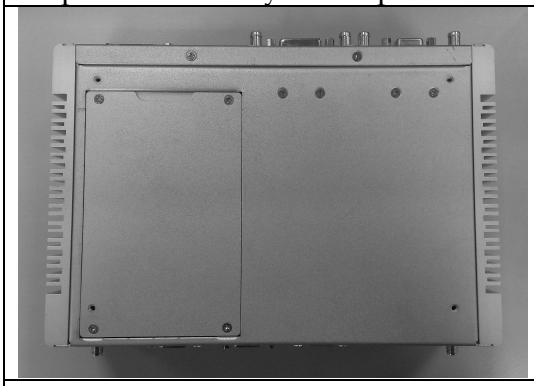
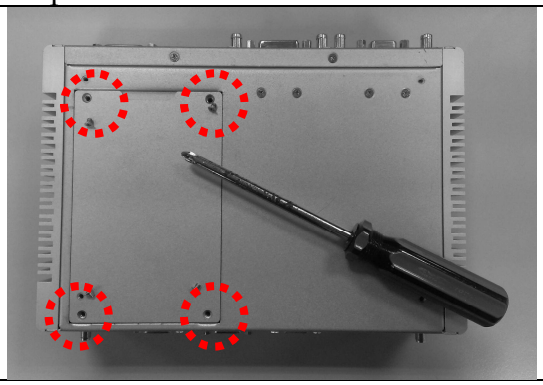
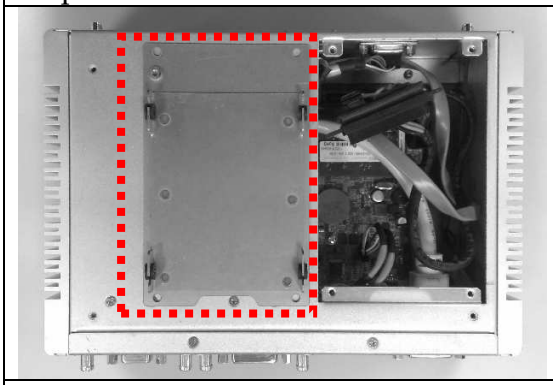
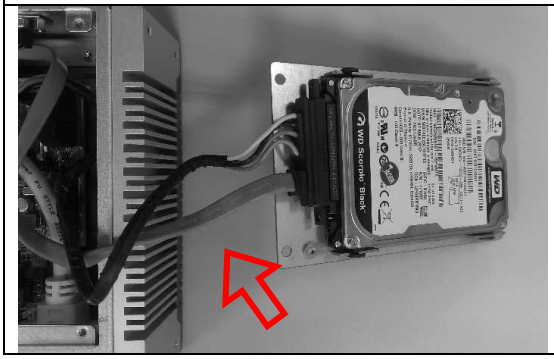
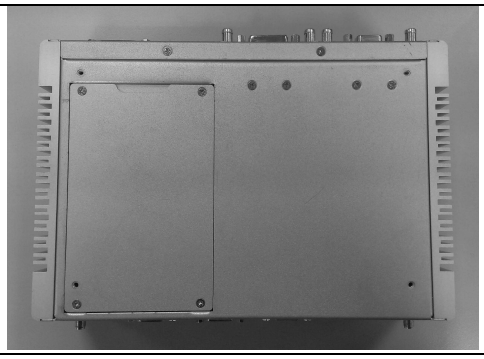
Side view of the BX-800W system

Chapter 2
System Installation

This chapter provides you with instructions to set up your system. Definitions and locations of all the interfaces are described so that you can easily configure your system. For more detailed PIN assignment and jumper setting, please refer to user's manual of mother board.

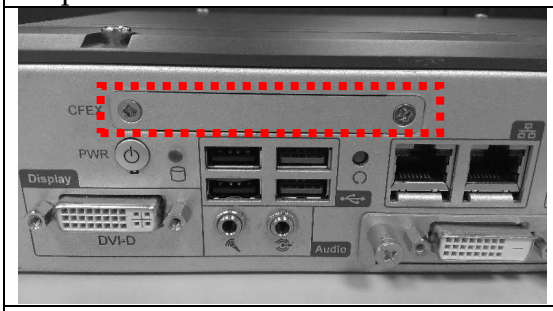
2.1 HDD Installation

HDD cover locates at the back of the system.

Step 1. Turn the system upside down	Step 2. Unscrew the HDD cover
	
Step 3. Take out the HDD cover	Step 4. Install the HDD onto cover
	
Step 5. Plug the SATA and power cable to connect the M/B and HDD *Note: Glue it if needed	Step 6. Screw the HDD cover back to the system and finish installation
	

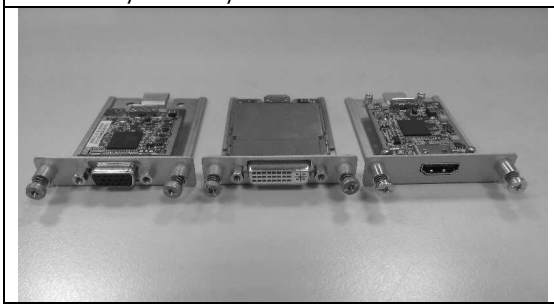
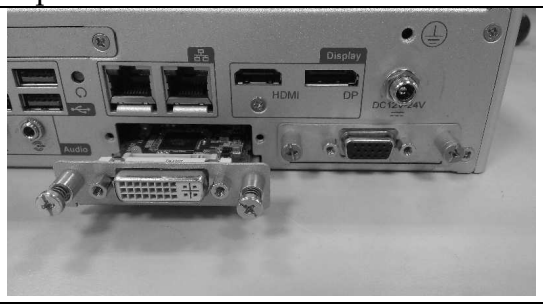
2.2 CFEX Installation

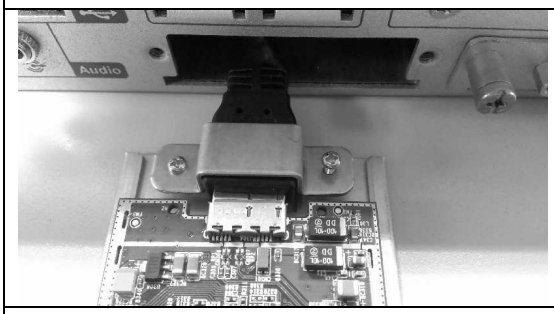
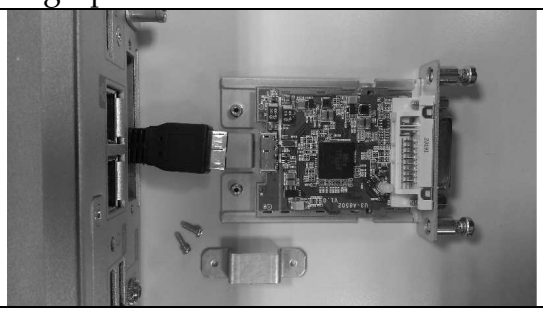
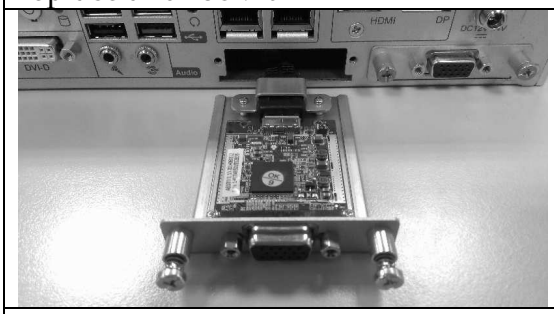
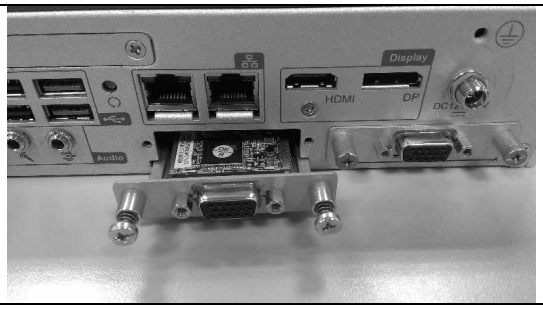
CFEX is a new Compact Flash (CF) technology and adapting legacy CF type one with advanced pin definitions. This helps overcome reliability issues with standard commercial memory. CFEX also supports SATA 3.0, SPI and other extensions, and achieves a read speed of 100 to 120Mbyte/s and write speed of 45 to 75Mbyte/s. Compared with other CF devices, it falls in the same low-cost bracket as CF and CF SATA and is less expensive than CFAST.

Step 1. Unscrew the CFEX cover	Step 2. Take the CFEX card
	
Step 3. Insert the CFEX card into the slot	Step 4. Finish installation
	

2.3 Replacement of Additional Graphic Modules

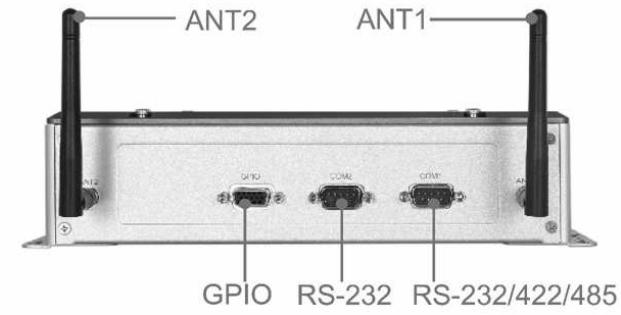
In addition to the built-in triple-display interfaces, two additional display devices are made available by our graphics modules; thus, the BX-800W system can support up to five display outputs by extended mode in the OS.
*Note: Modules must be installed by our factory. It's not recommended to buy USB Graphic Module separately. But customers can replace the graphic module with different interfaces by themselves.

Step 1. There are 3 kinds of graphic module that could be adopted: USB 3.0 to VGA/DVI-I/HDMI	Step 2. Unscrew the trays of the graphic module which you want to replace
	

Step 3. Pull out the tray	Step 4. Unlock the cable from the tray of graphic module
	
Step 5. Connect the cable to graphic module with which you want to replace and lock it	Step 6. Install the tray of graphic module back onto the system
	
Step 7. Screw the tray of graphic module properly	Step 8. Finish installation *Note: Drivers should be installed properly to run the feature
	

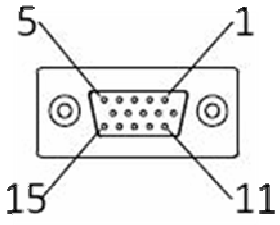
2.4 I/O Interfaces

2.4.1 Front View



ANT1 & ANT2 hole:
Antenna holes for WiFi or 3G/GPS module

GPIO:



- GPIO PIN Definition

PIN No.	Signal Description	PIN No.	Signal Description
1	EC_GPI0	2	GPO0 (Voltage from JP6)
3	EC_GPI1	4	GPO1 (Voltage from JP6)
5	EC_GPI2	6	GPO2 (Voltage from JP6)
7	EC_GPI3	8	GPO3 (Voltage from JP6)
9	GND	10	VCC5
11	N/A	12	N/A
13	N/A	14	N/A
15	N/A	X	X

- GPIO Output Voltage

JP6	Function
1-2 Short	5V
2-3 Short	3.3V ★ Default

COM port:

- RS-232

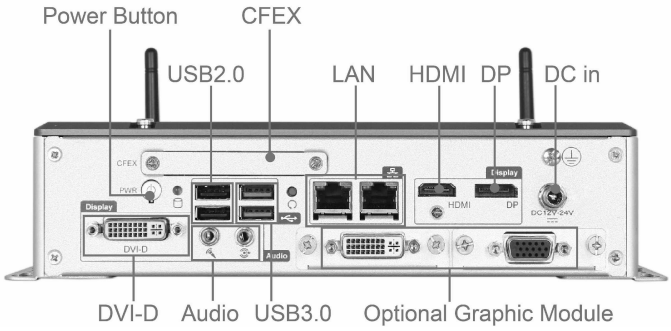
PIN No.	Signal Description
1	DCD#
2	RXD#
3	TXD#
4	DTR#
5	GND
6	DSR#
7	RTS#
8	CTS#
9	RI#

- RS-232/422/485

*Note: RS-232/422/485 configuration is determined by BIOS setting. Check BIOS setting for details.

PIN No.	Signal Description
1	DCD#/DT-
2	RXD#/DT+
3	TXD#/422R+
4	DTR#/422R-
5	GND
6	DSR#
7	RTS#
8	CTS#
9	RI#

2.4.2 Rear View



DC in: (Wide range DC source support, 12~24V)
Using the provided DC source to connect to the system

Power Button:
Press the power button to turn ON/OFF the system

USB3.0 & USB 2.0:
Support four USB (Universal Serial Bus) ports, two USB 3.0 and two USB 2.0.

LAN:
Two Gigabit Ethernet (10/100/1000 Mbits/sec) LAN ports by using Intel WGI218LM & WGI210AT GbE Ethernet Controller

HDMI:
Type A HDMI display output

DP:
DP (DisplayPort) display output

DVI-D:
DVI-D display output

PIN No.	Signal Description	PIN No.	Signal Description
1	TDC0-	2	TDC0+
3	GND	4	GND
5	TDC1-	6	TDC1+
7	GND	8	GND
9	TDC2-	10	TDC2+
11	GND	12	GND
13	TLC-	14	TLC-+
15	VCC5	16	VCC5
17	DDC_SC	18	DDC_SD
19	HPD_IN	20	X

Audio:
Connectors for MIC-In and Line-Out

CFEX:
CFEX is a new Compact Flash (CF) technology and adapting legacy CF type one with advanced pin definitions. This helps overcome reliability issues with standard commercial memory. CFEX also supports SATA 3.0, SPI and other extensions, and achieves a read speed of 100 to 120Mbyte/s and write speed of 45 to 75Mbyte/s. Compared with other CF devices, it falls in the same low-cost bracket as CF and CF SATA and is less expensive than CFAST.

Optional Graphic Module:
There are 3 kinds of graphic module that could be adopted.
*Note: Modules must be installed by our factory. It's not recommended to buy USB Graphic Module separately.

- USB 3.0 to VGA
- USB 3.0 to DVI-I
- USB 3.0 to HDMI

2.5 Getting Started

It is easy to get the system started.

Step 1. Make sure the power supply (12~24V) is connected properly	Step 2. Press the power button to turn on the system *Note: Power LED shines BLUE when system is "ON"; ORANGE when "OFF"
	

Chapter 3
BIOS Setup Information

Mother board for BX-800W uses AMI BIOS structure stored in Flash ROM. These BIOS has a built-in Setup program that allows users to modify the basic system configuration easily. This type of information is stored in CMOS RAM so that it is retained during power-off periods. When system is turned on, mother board communicates with peripheral devices on the carrier board and checks its hardware resources against the configuration information stored in the CMOS memory. If any error is detected, or the CMOS parameters need to be initially defined, the diagnostic program will prompt the user to enter the SETUP program. Some errors are significant enough to abort the start up.

3.1 Entering Setup – Launch System Setup

Power on the computer and the system will start POST (Power On Self Test) process. When the message below appears on the screen, press <DEL> key will enter BIOS setup screen.

Press <DEL> to enter SETUP

If the message disappears before responding and still wish to enter Setup, please restart the system by turning it OFF and On or pressing the RESET button. It can be also restarted by pressing <Ctrl>, <Alt>, and <Delete> keys on keyboard simultaneously.

3.2 Main

Use this menu for basic system configurations, such as time, date etc.

Build Time, Processor Brand Name, Processor Speed, Install Memory, etc
These items show the firmware and memory specifications of your system.

Build Time
The BIOS Release Date.

Processor Brand Name / Processor Speed
This value will change depend of different CPUs. And please make sure the Processor that you'll install will be compatible with mother board's User's Manual

System Date
The date format is <Day>, <Month> <Date> <Year>. Use [+] or [−] to configure system Date.

System Time
The time format is <Hour> <Minute> <Second>. Use [+] or [−] to configure system Time.

Access Level

3.3 System Setup Utility

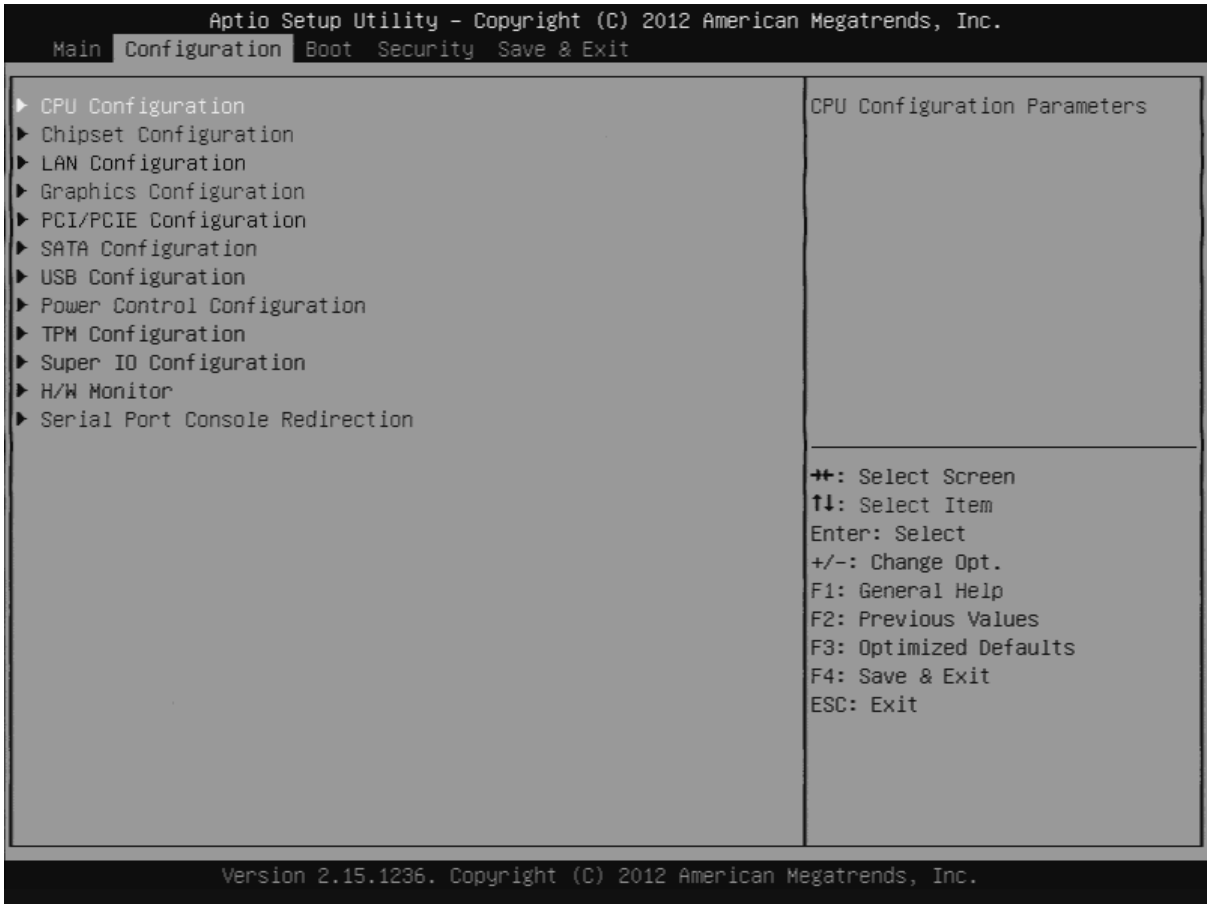
To enter the system setup utility, press <F1> on either the main keyboard or Console Redirection host computer's keyboard during POST.
Table 1 lists the available menus in the system setup utility. Each menu is equivalent to a functional group and consists of all correlated BIOS settings.

Table 1. System Setup Utility menus

Menu	Usage
Main	Display a summary of the system and configure the system date and time.
Configuration	Configure the system interfaces, system management, power management, thermal management, and other system characteristics.
Boot	Configure boot device priority settings.
Security	Configure user authentication requirements.
Save & Exit	Save changes and exit the system setup utility, or restore default settings.

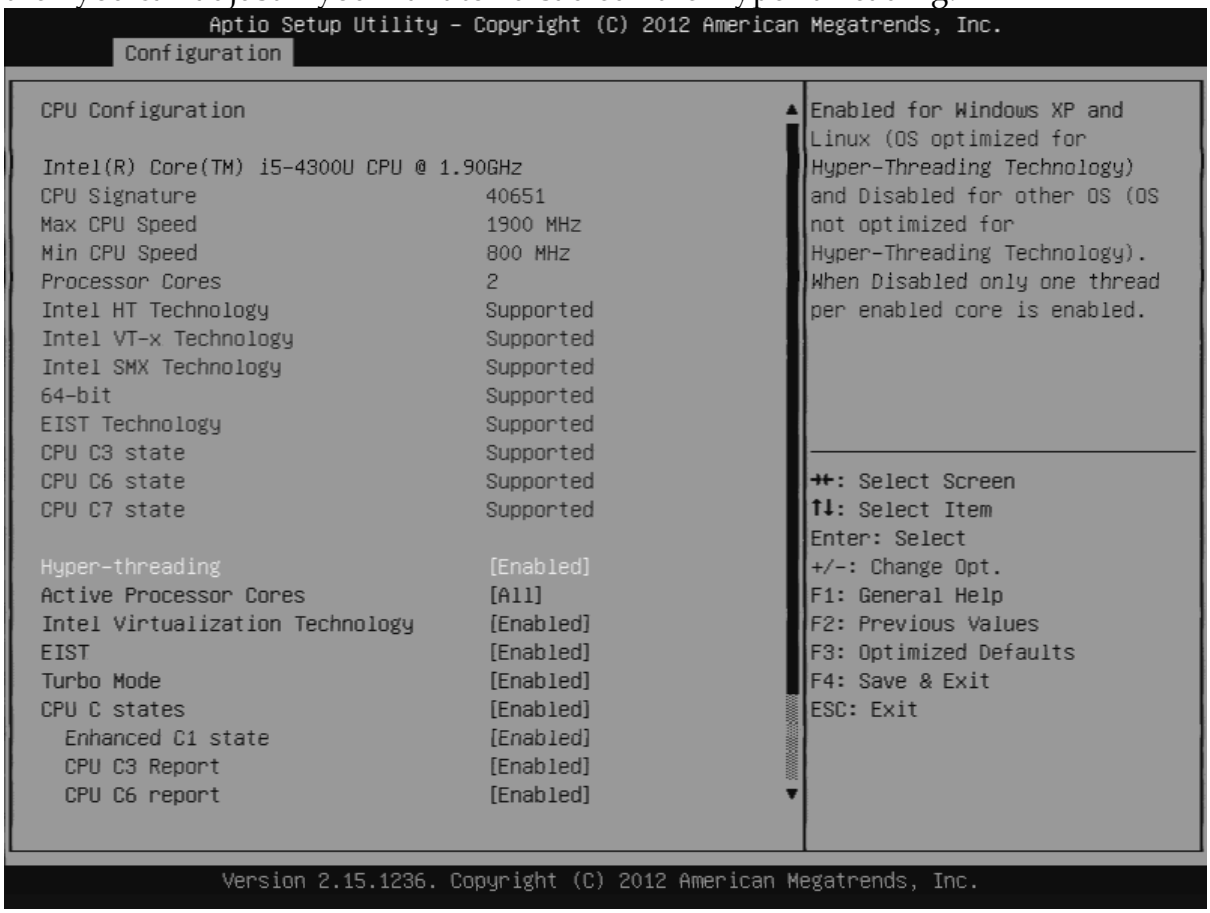
3.4 Configuration

Use this menu to set up the items of special enhanced features.


Aptio Setup Utility – Copyright (C) 2012 American Megatrends, Inc.
Main Configuration Boot Security Save & Exit
CPU Configuration
Chipset Configuration
LAN Configuration
Graphics Configuration
PCI/PCIE Configuration
SATA Configuration
USB Configuration
Power Control Configuration
TPM Configuration
Super IO Configuration
H/W Monitor
Serial Port Console Redirection
CPU Configuration Parameters
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.15.1236. Copyright (C) 2012 American Megatrends, Inc.

CPU Configuration

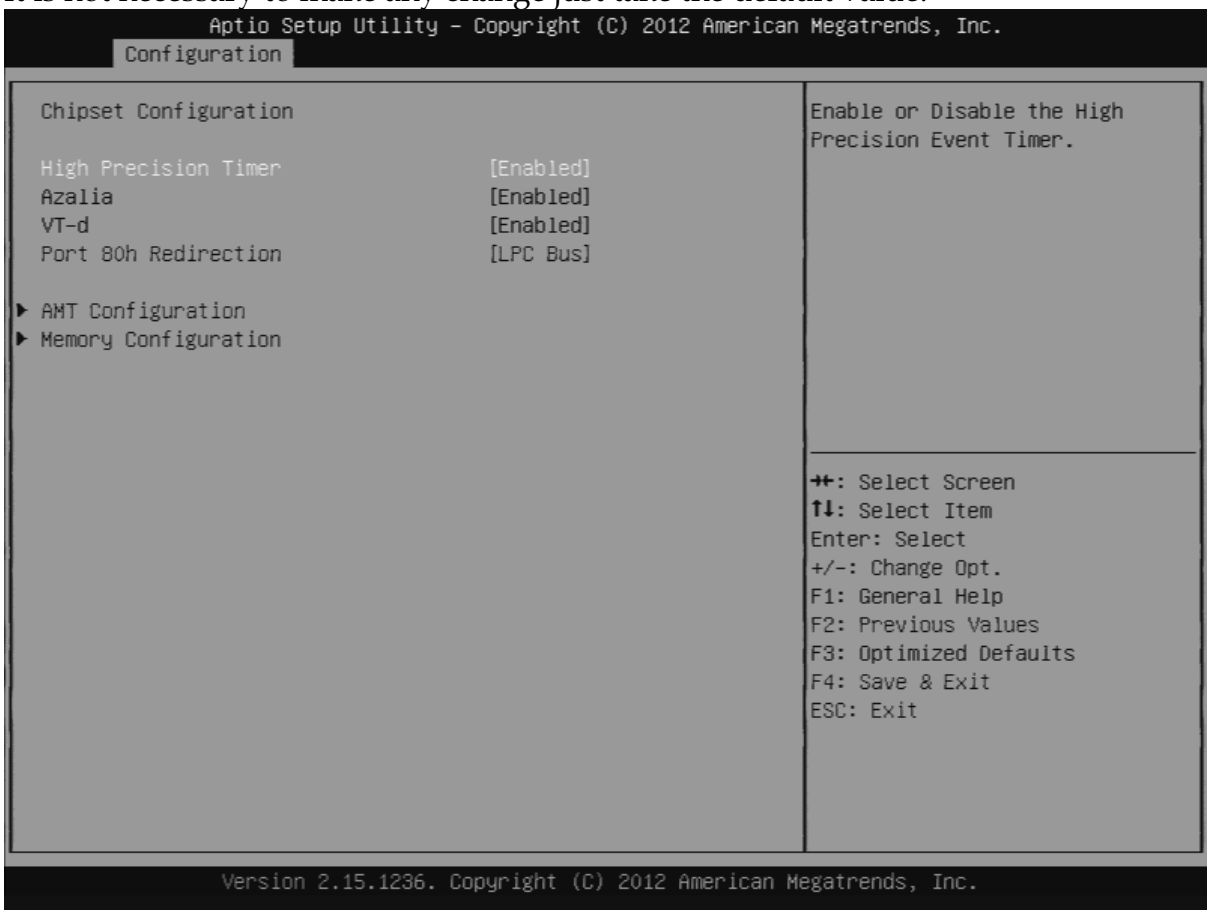
It is not necessary to make any change just take the default value.
Here you'll see the Max Processor Speed/Processor Cores/Intel HT technology then you can adjust if you want to "disabled" the Hyper-threading.



BIOS Item	Usage	Item-Specific Help
Hyper-threading	-Disabled -Enabled ★ Default	Enabled for Windows XP / Linux and Disabled for other OS
Active Processor Cores	-All ★ Default -1	Select the number of physical cores to enable in each processor package
Intel Virtualization Technology	-Disabled -Enabled ★ Default	When enabled, a VMM can utilize the additional hardware capabilities provided by Vanderpool Technology
EIST	-Disabled -Enabled ★ Default	Enabled/Disabled Intel SpeedStep
Turbo Mode	-Disabled -Enabled ★ Default	Turbo Mode
CPU C states	-Disabled -Enabled ★ Default	CPU C states
Enhanced C1 state	-Disabled -Enabled ★ Default	Enhanced C1 state
CPU C3 report	-Disabled -Enabled ★ Default	CPU C3 report
CPU C6 report	-Disabled -Enabled ★ Default	CPU C6 report

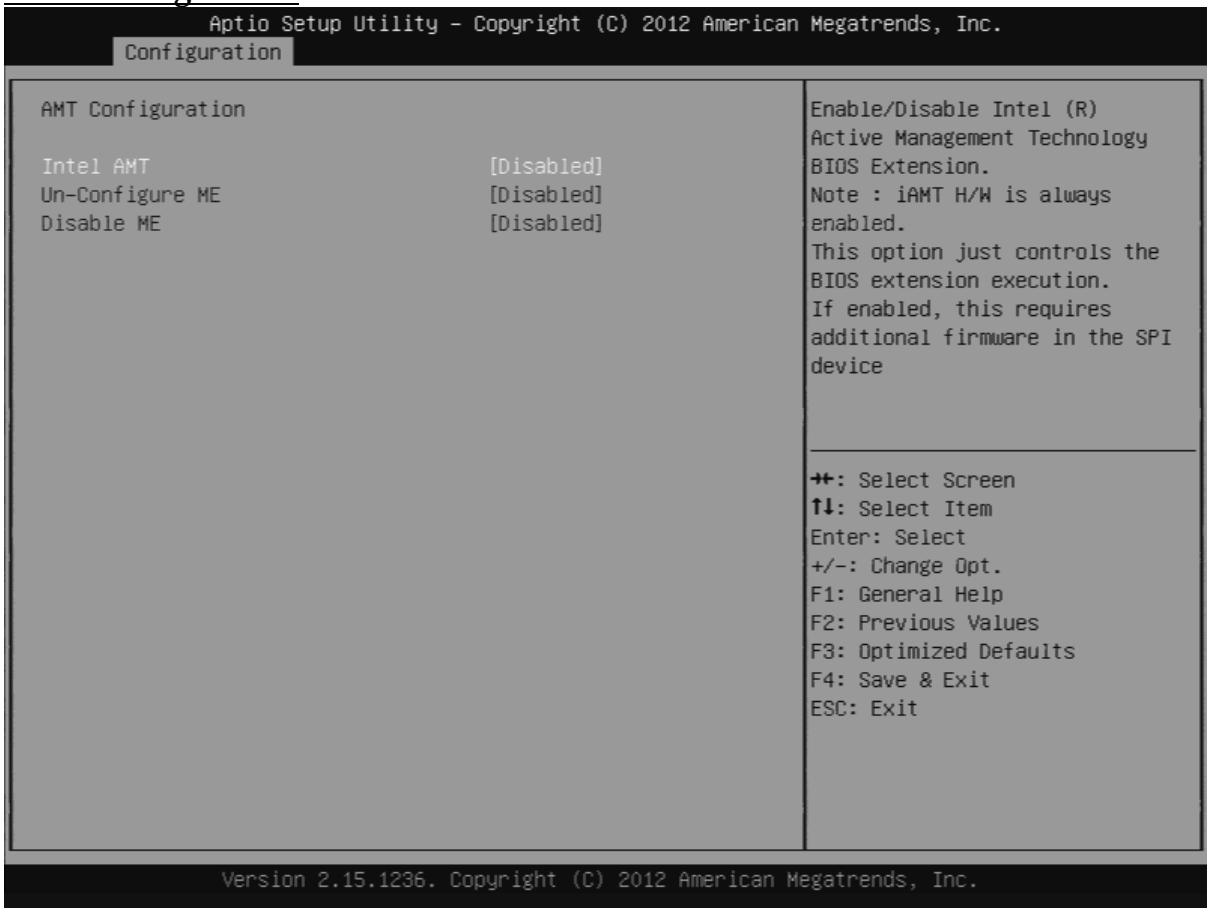
Chipset Configuration

It is not necessary to make any change just take the default value.



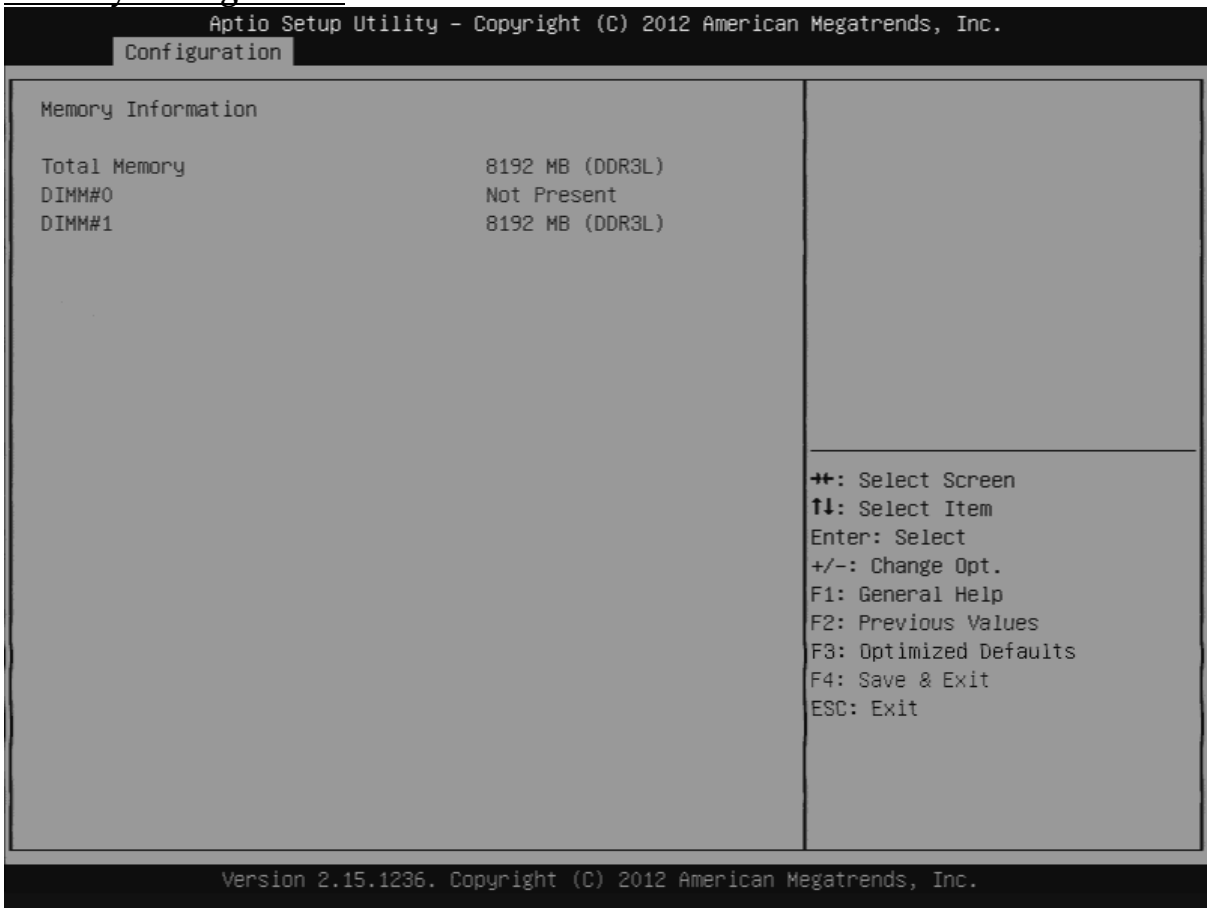
BIOS Item	Usage	Item-Specific Help
High Precision Timer	-Disabled -Enabled★ Default	
Azalia	-Disabled -Enabled★ Default	
VT-d	-Disabled ★ Default -Enabled	Enabled/Disabled VT-d function on MCH
Port 80h Redirection	-LPC Bus -PCIE Bus	

AMT Configuration

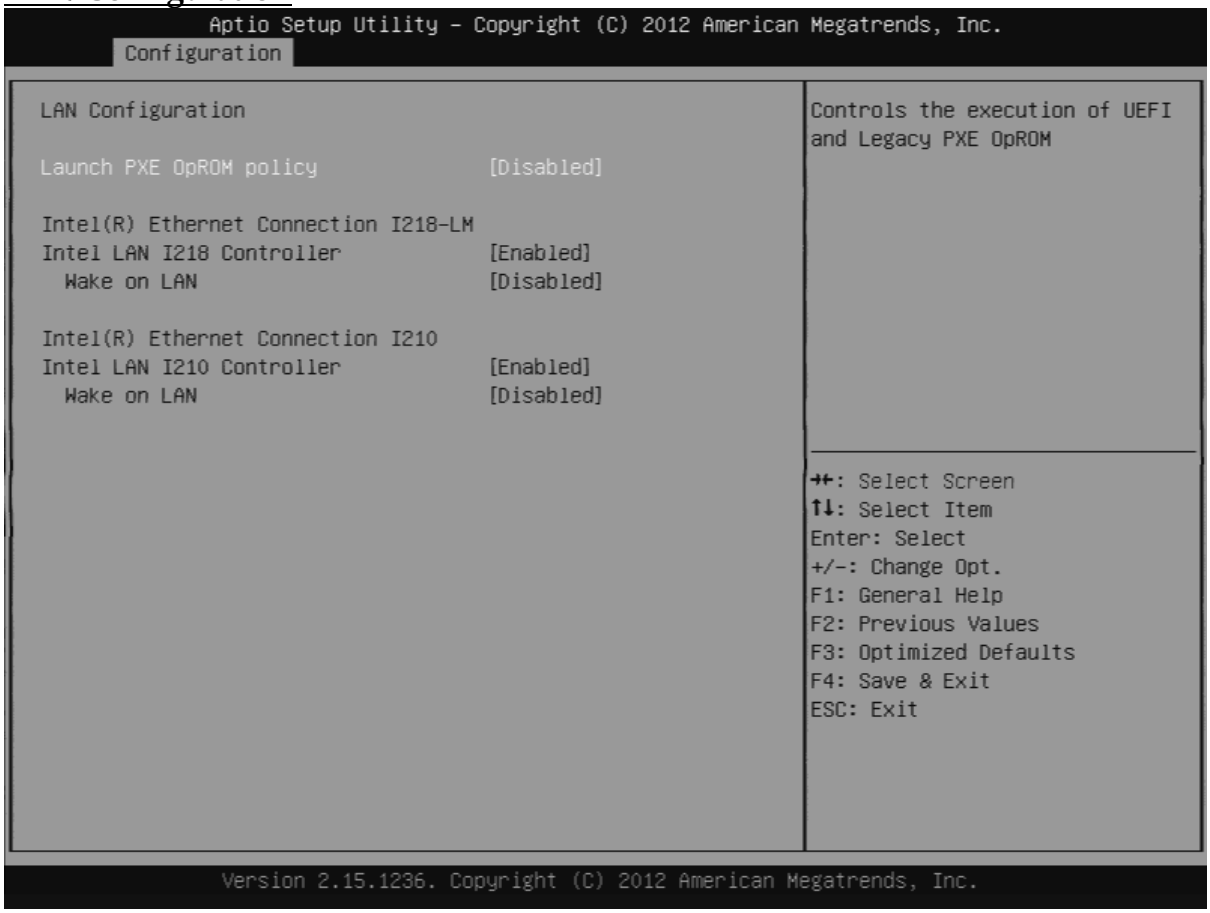


BIOS Item	Usage	Item-Specific Help
Intel AMT	-Disabled -Enabled ★ Default	Disables/Enabled iAMT function
Un-Configure ME	-Disabled ★ Default -Enabled	
Disable ME	-Disabled ★ Default -Enabled	

Memory Configuration

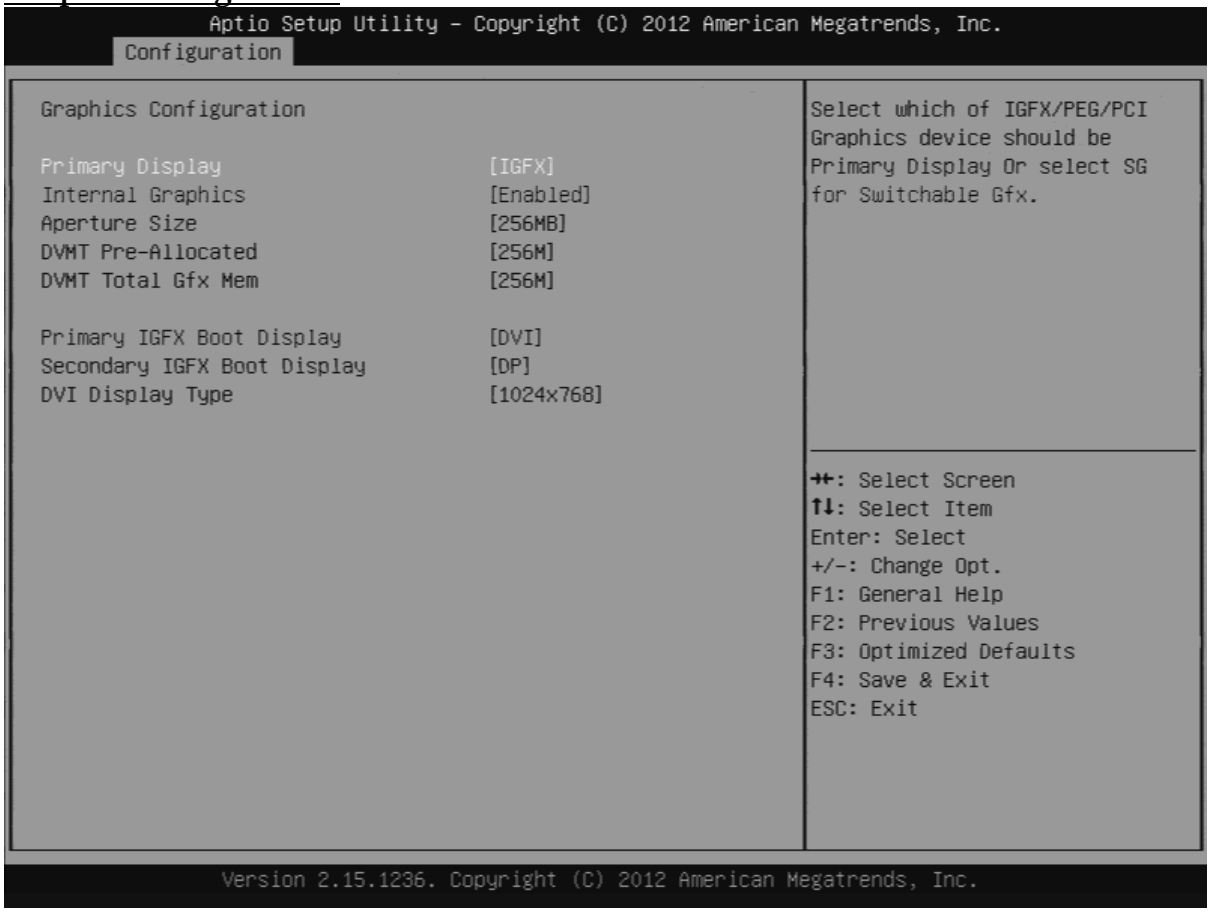


LAN Configuration



BIOS Item	Usage	Item-Specific Help
Launch PXE OpROM Policy	-Disabled ★ Default -Enabled	
Intel LAN I218 Controller	-Disabled -Enabled ★ Default	Enable/Disable Intel LAN I218
Wake on LAN	-Disabled ★ Default -Enabled	
Intel LAN I210 Controller	-Disabled -Enabled ★ Default	Enable/Disable Intel LAN I210
Wake on LAN	-Disabled ★ Default -Enabled	

Graphic Configuration

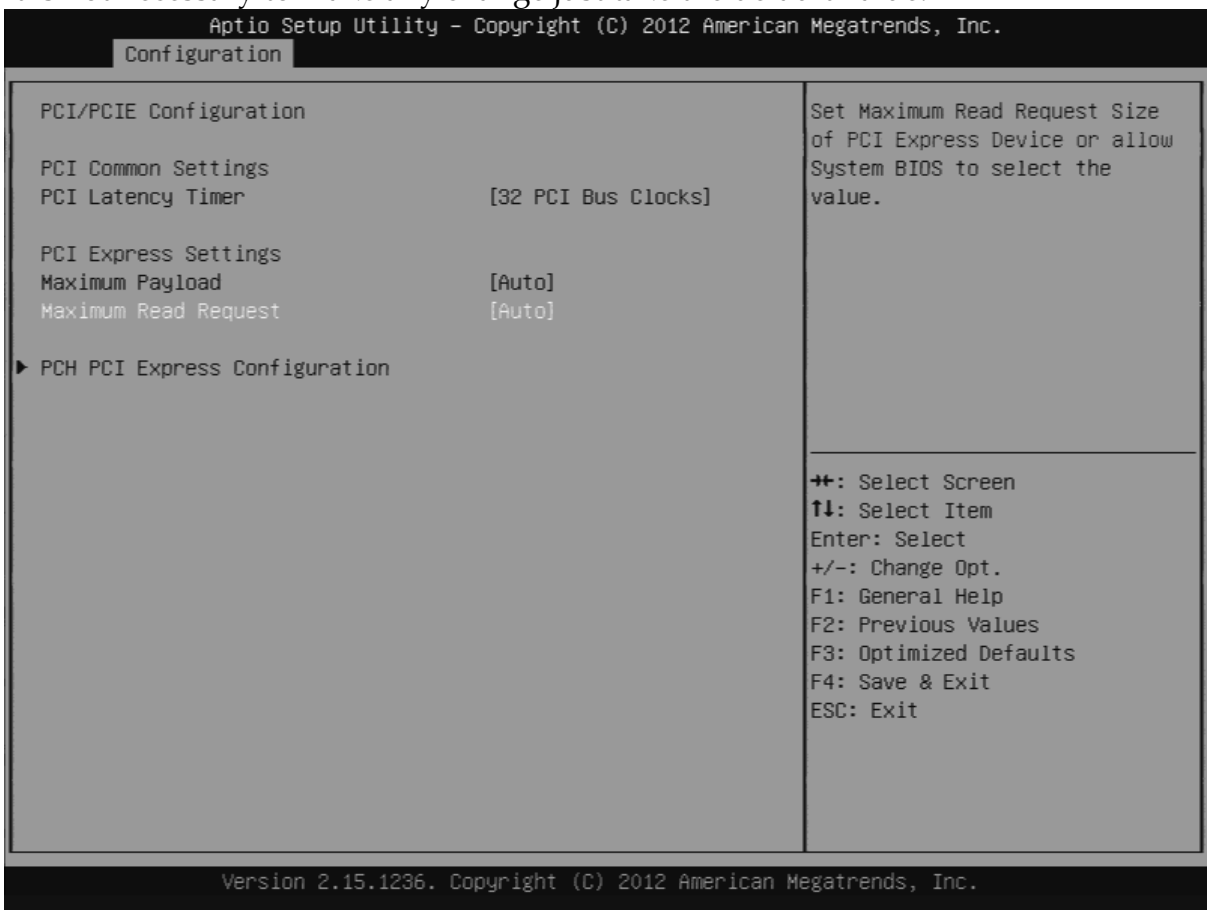


BIOS Item	Usage	Item-Specific Help
Primary Display	-Auto -IGFX ★ Default -PCIE	Select which of IGFX/PCI Graphics should be Primary Display or select Secondary Display for switchable Graphics
Internal Graphics	-Auto -Disabled -Enabled ★ Default	Keep IGD Enabled based on the setup options
Aperture Size	-128MB -256MB ★ Default -512MB	Select the Aperture Size
DVMT Pre-Allocated	-32M -64M -96M -128M -160M -192M -224M -256M ★ Default -288M	Select DVMT 5.0 Pre-Allocated (Fixed) Graphics Memory size used by the internal Graphics Device

	-320M -352M -384M -416M -448M -480M -512M -1024M	
DVMT Total Gfx Mem	-128MB -256MB ★ Default -MAX	Select DVMT5.0 Total Graphics Memory size used by the Internal Graphics Device
Primary IGFX Boot Display	-VBIOS Default -HDMI -DVI ★ Default -DP	
Secondary IGFX Boot Display	-VBIOS Default -HDMI ★ Default -DVI -DP	
DVI Display Type	-1024x768 ★ Default -1280x1024 -1360x768 -1920x1200	

PCI/PCIE Configuration

It is not necessary to make any change just take the default value.

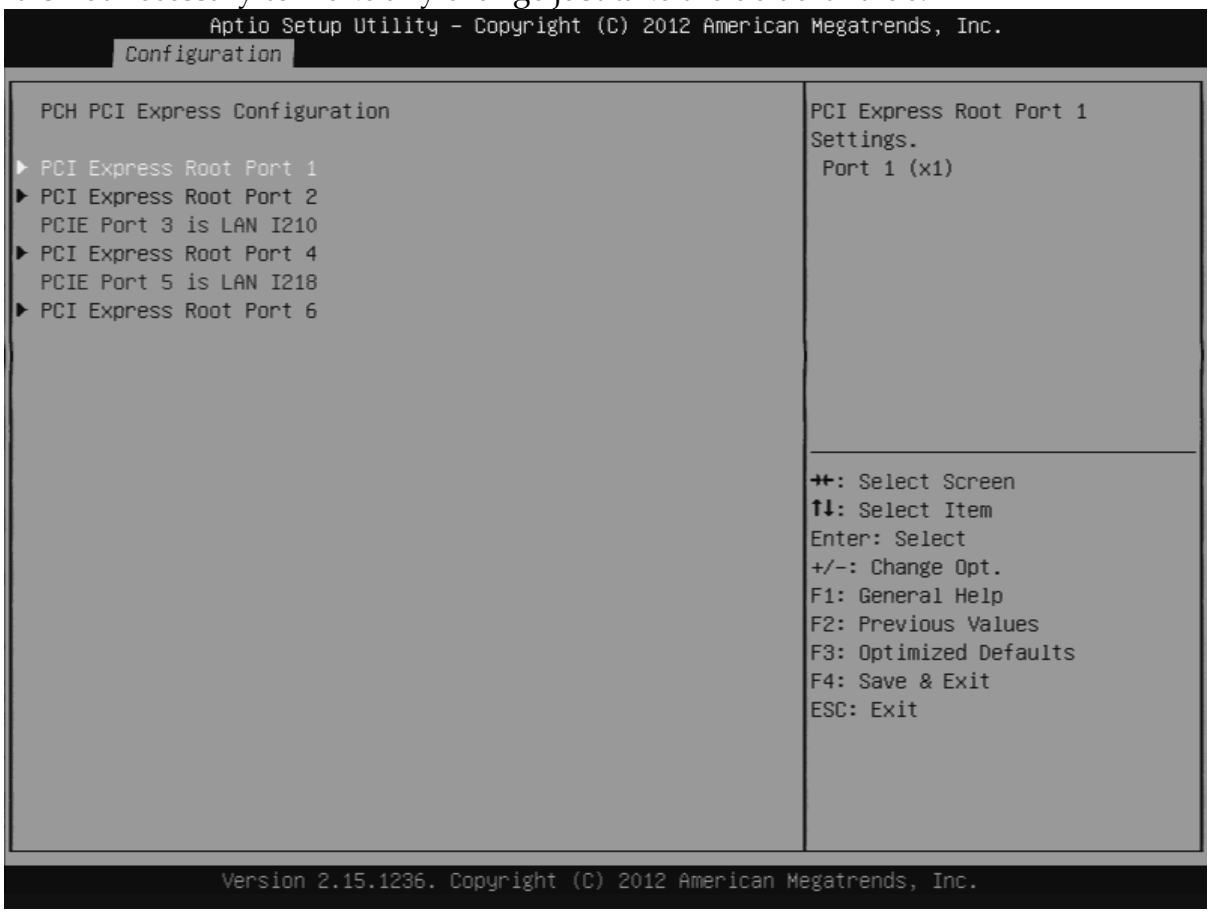


BIOS Item	Usage	Item-Specific Help
PCI Latency Timer	-32 PCI Bus Clocks -64 PCI Bus Clocks -96 PCI Bus Clocks -128 PCI Bus Clocks -160 PCI Bus Clocks -192 PCI Bus Clocks -224 PCI Bus Clocks -248 PCI Bus Clocks	
Maximum Payload	-Auto -128 Bytes -256 Bytes -512 Bytes -1024 Bytes -2048 Bytes -4096 Bytes	
Maximum Read Request	-Auto -128 Bytes -256 Bytes -512 Bytes -1024 Bytes	

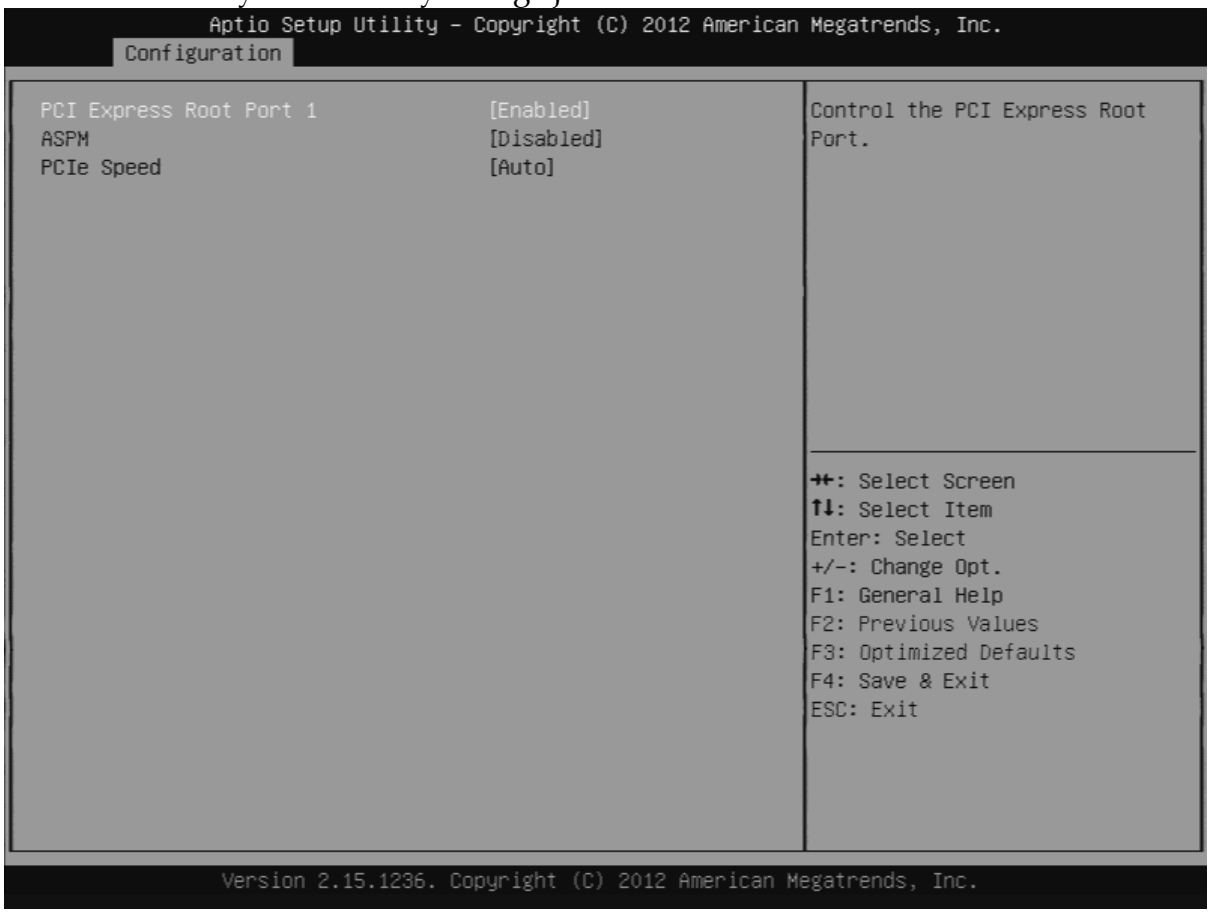
	-2048 Bytes -4096 Bytes	

PCH PCI Express Configuration

It is not necessary to make any change just take the default value.



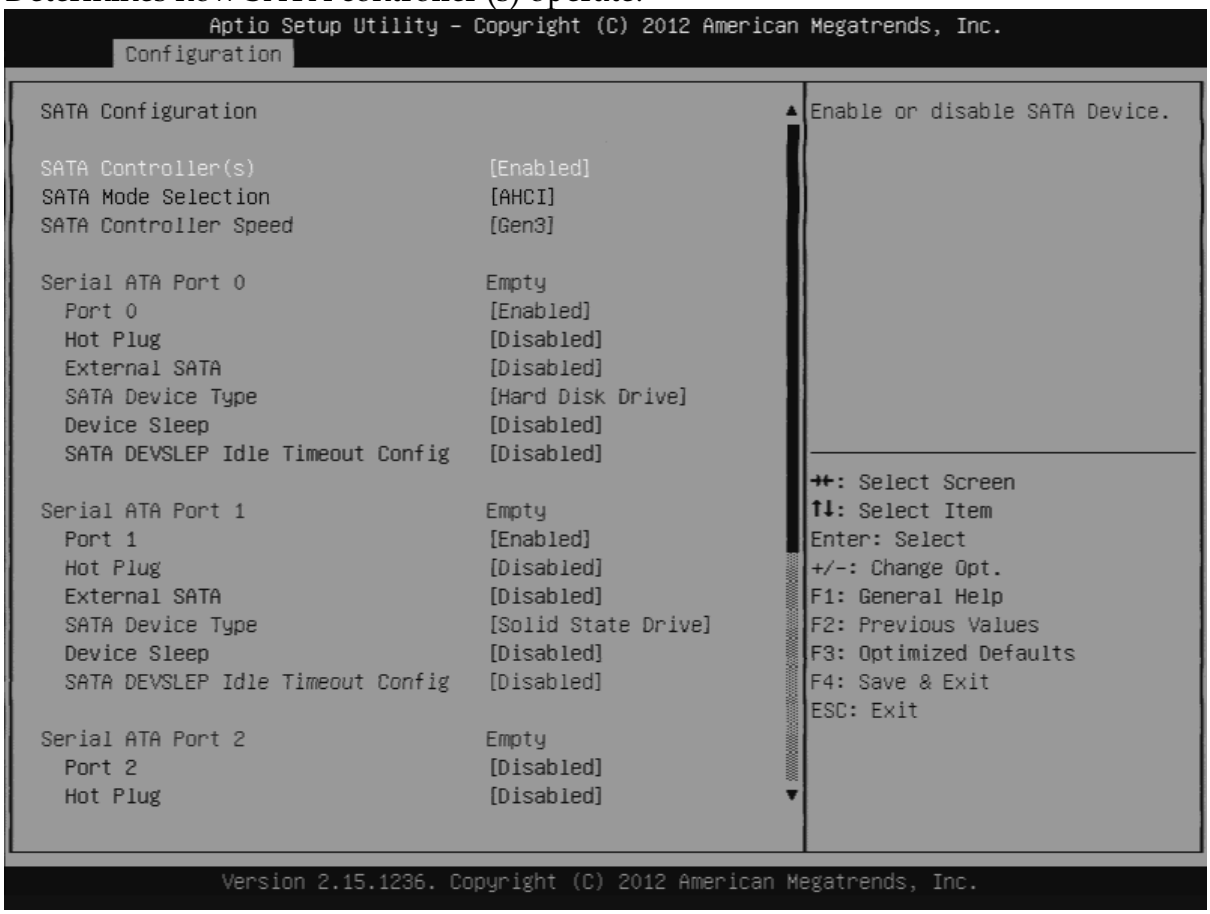
PCI Express Root Port 1/2/4/6 (Only take Port 1 as an example)
It is not necessary to make any change just take the default value.



BIOS Item	Usage	Item-Specific Help
PCI Express Root Port 1/2/4/6	-Disabled -Enabled ★ Default	Control PCI Express root port
ASPM	-Disabled ★ Default -L0S -L1 -L0S L1 -Auto	Control PCIe Active State Power Management setting
PCIe Speed	-Auto ★ Default -Gen1 -Gen2	Select PCIe Speed to Gen1 or Gen2

SATA Configuration

Determines how SATA controller (s) operate.

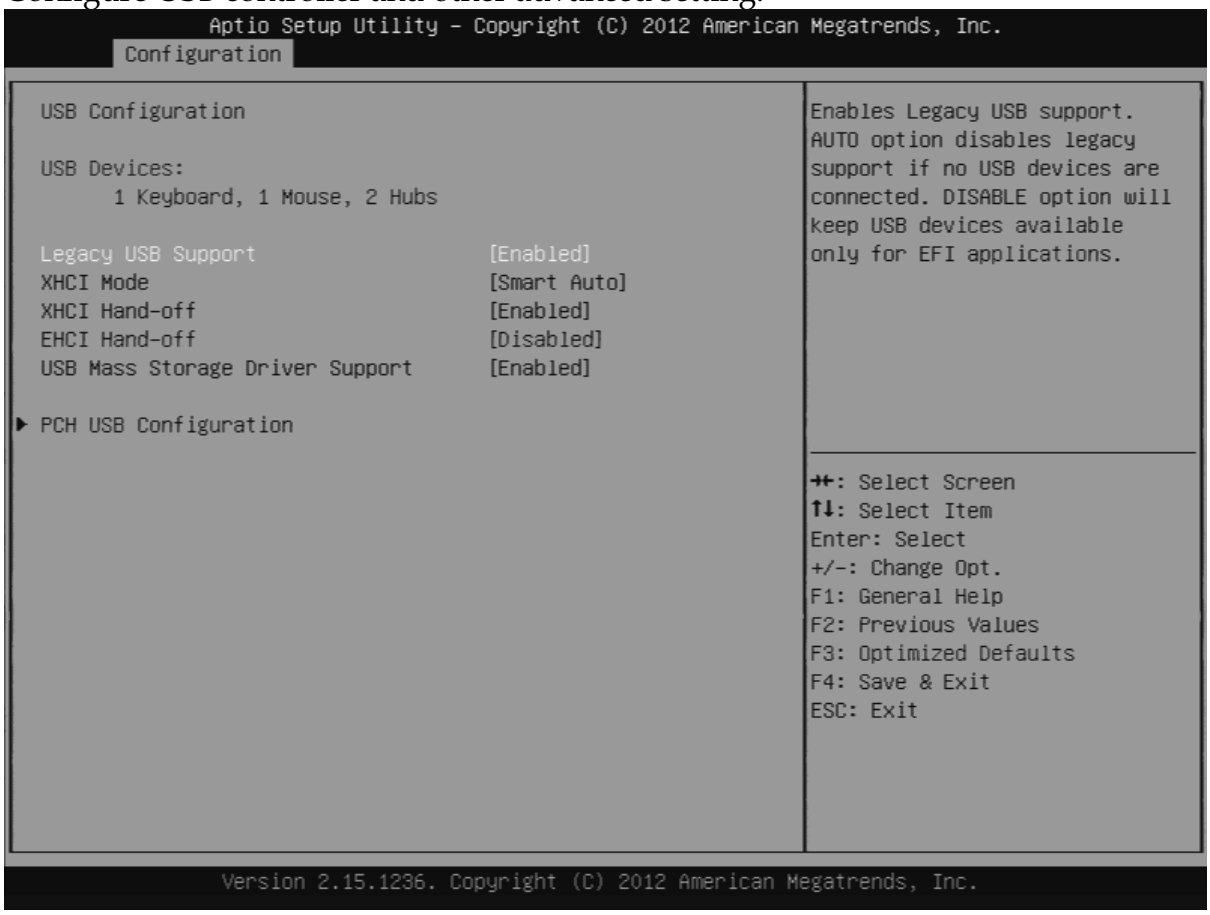


BIOS Item	Usage	Item-Specific Help
SATA Controller(s)	-Enabled ★ Default -Disabled	Determines how SATA controller (s) operate
SATA Mode Selection	-Disabled -IDE -AHCI ★ Default -RAID	Determines how SATA controller (s) operate
SATA Controller Speed	-Default -Gen1 -Gen2 -Gen3 ★ Default	
Port 0~3	-Disabled -Enabled ★ Default	
Hot Plug	-Disabled ★ Default -Enabled	
External SATA	-Disabled ★ Default -Enabled	
SATA Device Type	-Hard Disk Drive -Solid State Drive ★ Default	

Device Sleep	-Disabled ★ Default -Enabled	
SATA DEVSLEP Idle Timeout Configuration	-Disabled ★ Default -Enabled	

USB Configuration

Configure USB controller and other advanced setting.

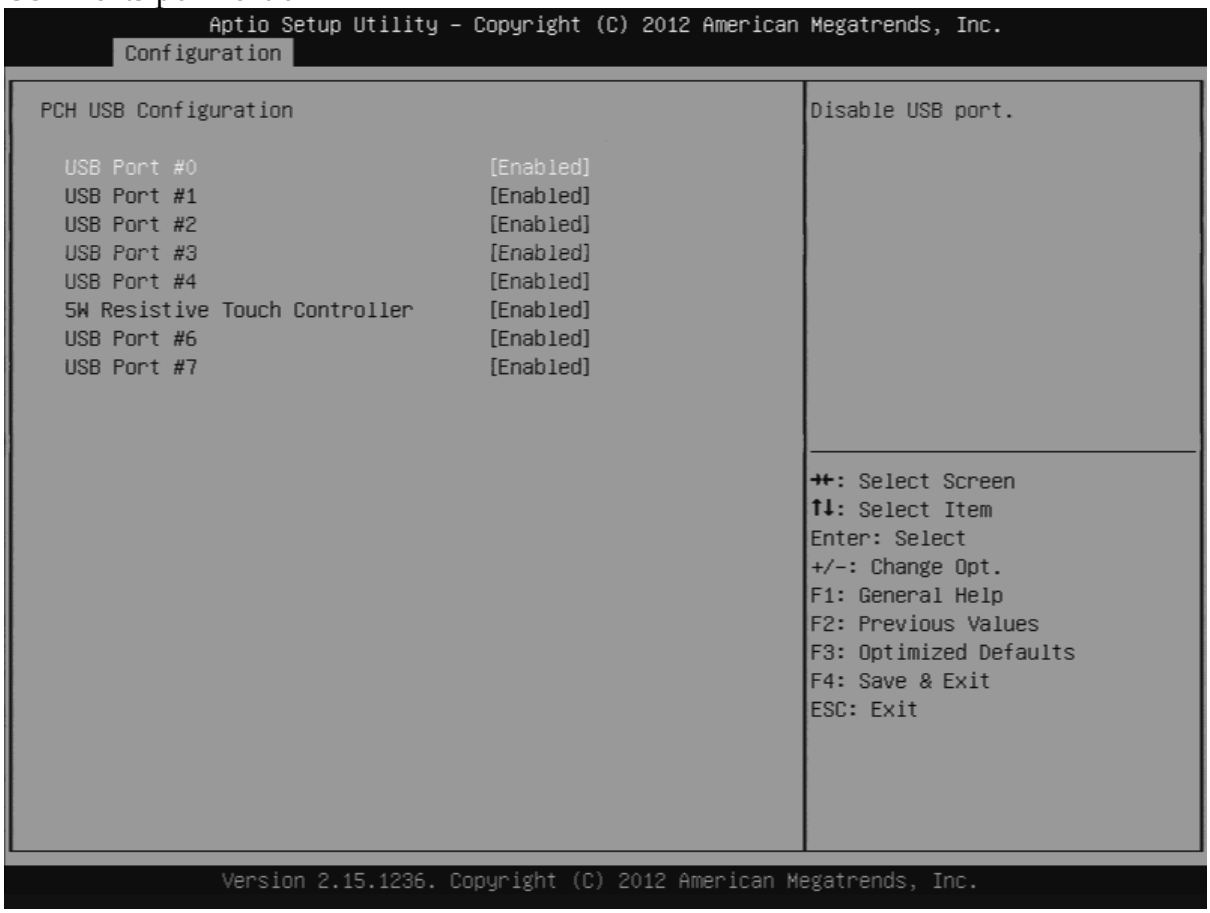


BIOS Item	Usage	Item-Specific Help
Legacy USB support	-Enabled ★ Default -Disabled	Enables Legacy USB support. AUTO option disables legacy support if no USB devices are connected. DISABLE option will keep USB devices available only for EFI applications.
XHCI Mode	-Smart Auto ★ Default -Auto -Enabled -Disabled Manual	
XHCI Hand-off	-Enabled ★ Default -Disabled	

EHCI Hand-off	-Enabled -Disabled★ Default	
USB Mass Storage Driver Support	-Enabled ★ Default -Disabled	
PCH USB Configuration -USB Ports per-Port 0~7 Disable	-Disabled ★ Default -Enabled	Control each of the USB ports disabling

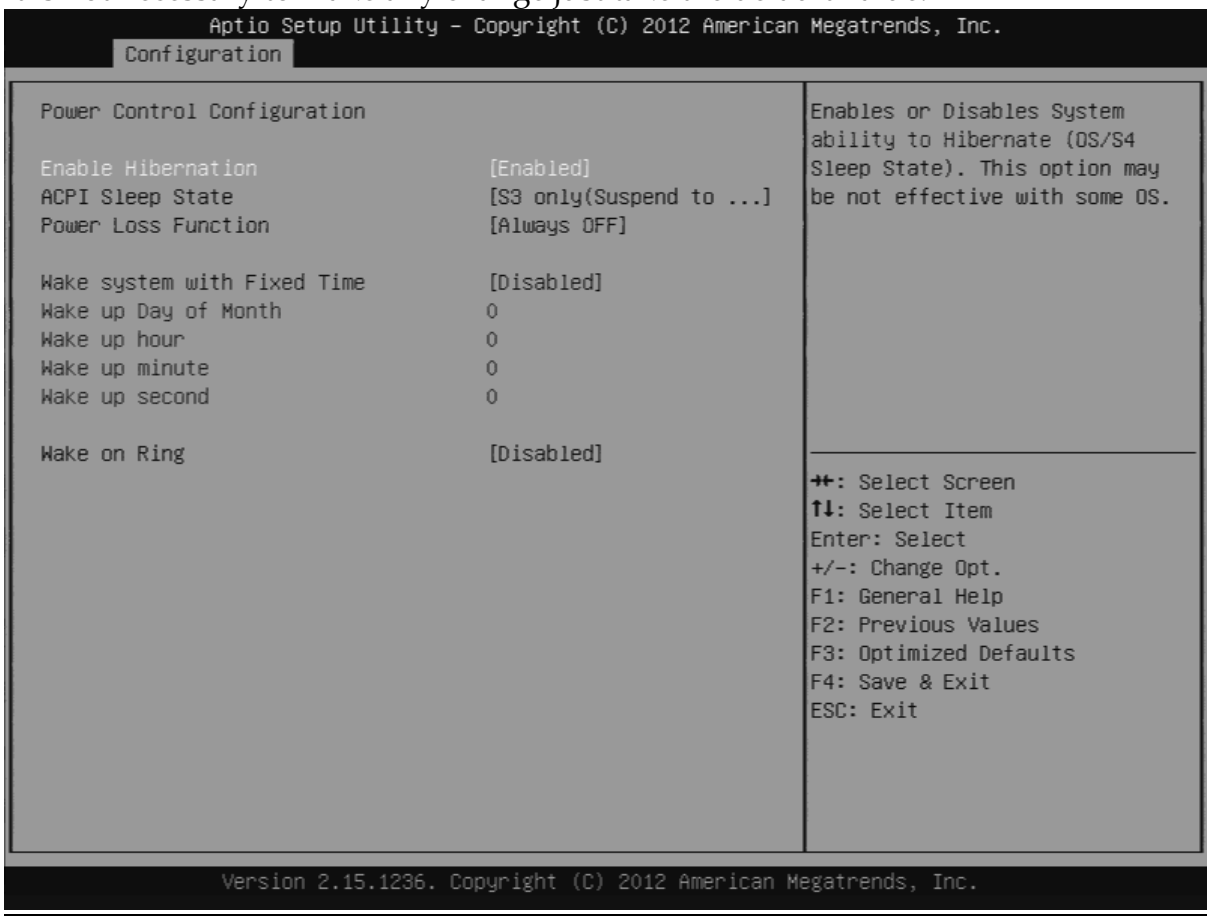
PCH USB Configuration

USB Ports per-Port 0~7



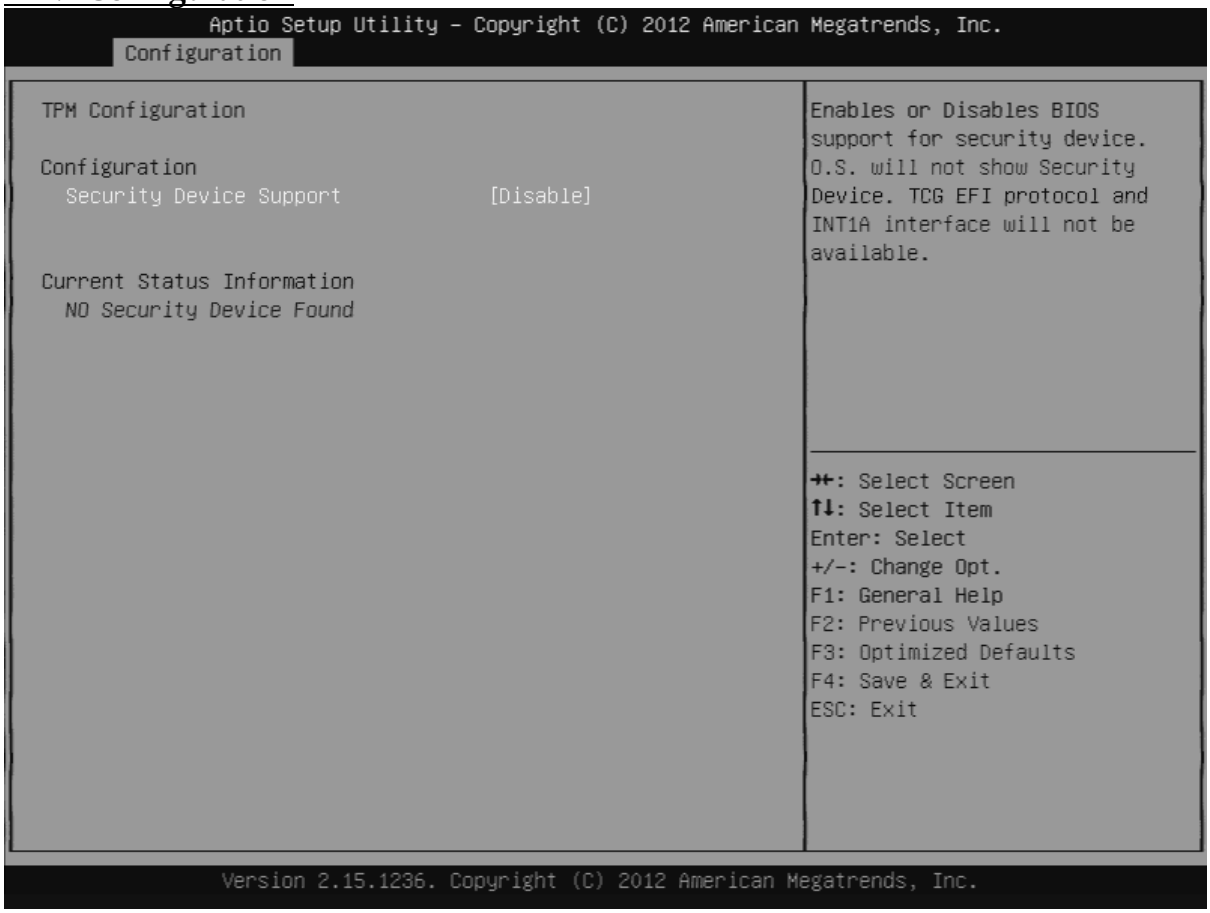
Power Control Configuration

It is not necessary to make any change just take the default value.



BIOS Item	Usage	Item-Specific Help
Enable Hibernation	-Disabled -Enabled ★ Default	Enable or Disable Hibernate Funtion
ACPI Sleep State	-S3 Only (Suspend to RAM)	Select the highest ACPI sleep state when the SUSPEND button is pressed
Power loss function	-Always Off ★ Default - Always On -Last State	Select AC Power state when power is re-applied after a power failure
Wake system with Fixed Time	-Disabled ★ Default -Enabled	Enable or disable System wake on alarm event. When enabled, System will wake on the hr:min:sec specified
Wake on Ring	-Disabled ★ Default -Enabled	N/A

TPM Configuration

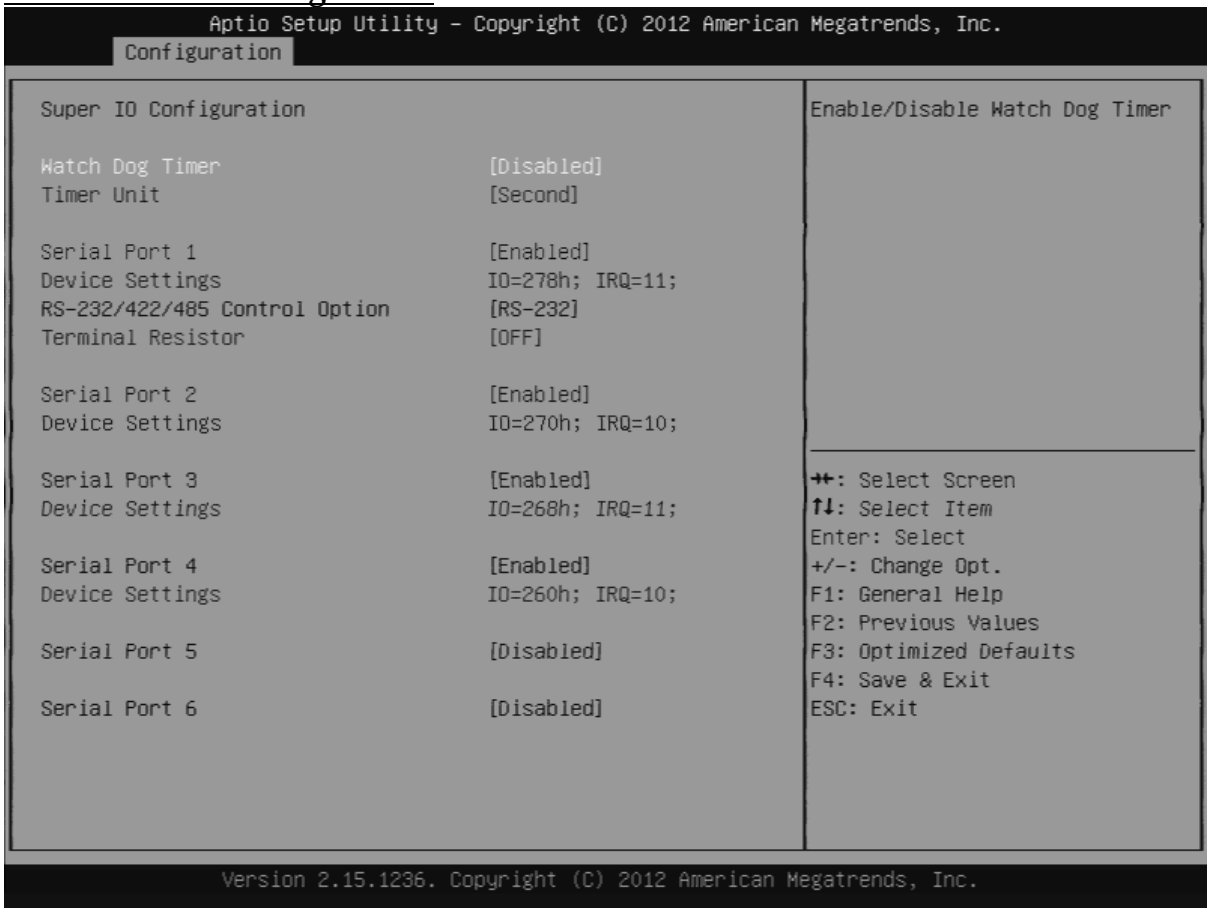


BIOS Item	Usage	Item-Specific Help
Security Device Support	-Disabled ★ Default -Enabled	Enabled/Disabled TPM Function

Super IO Configuration

Enable/Disable Watch Dog Timer

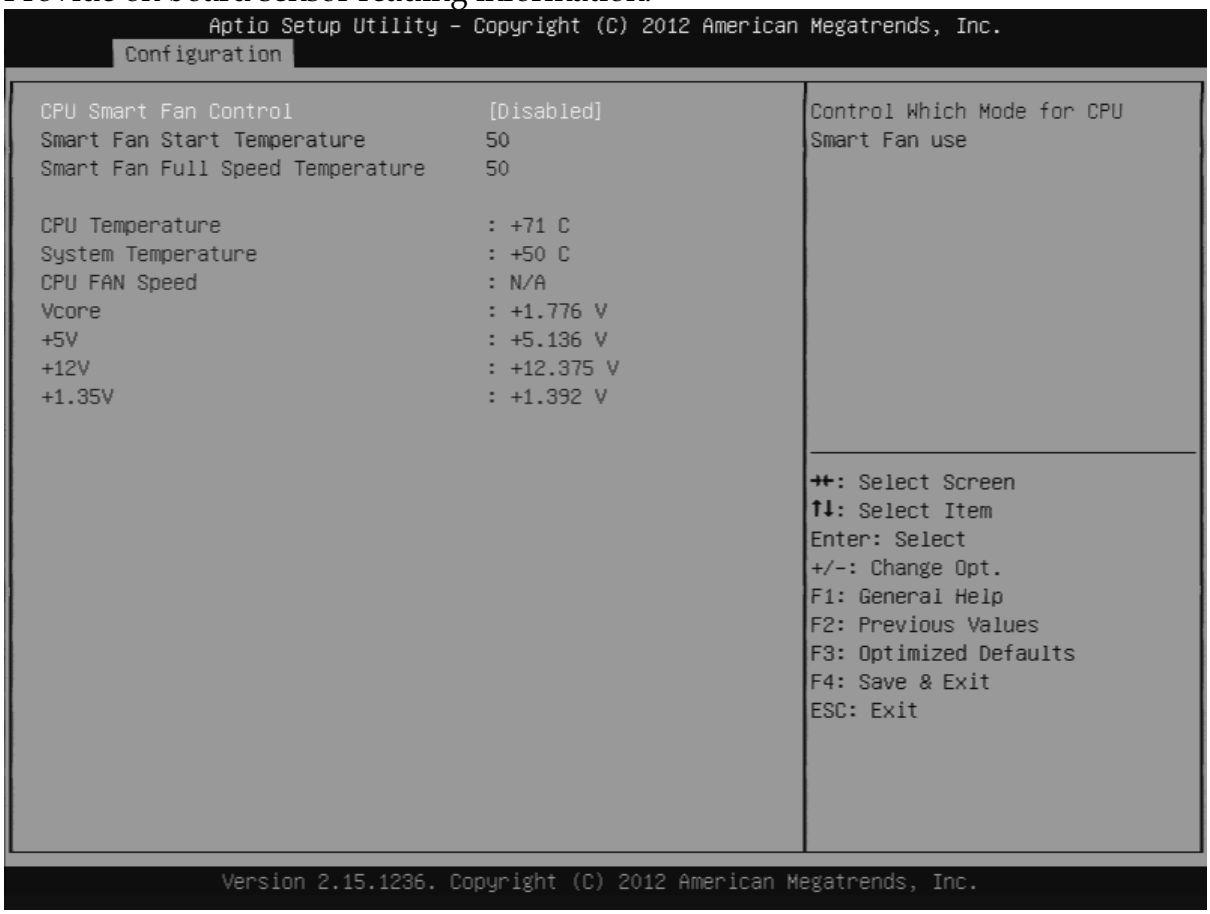
Serial Port 0~6 Configuration



BIOS Item	Usage	Item-Specific Help
WDT Controller	-Disable ★ Default -Enabled	
Timer Unit	- Second ★ Default - Minute	
Timer value	20 ★ Default	
Serial Port 1~6	-Disable -Enable ★ Default	Setting Serial Port 1~6
RS-232/422/485 Control Option	-RS-232 -RS-422 -RS-485	

Hardware Monitor

Provide on board sensor reading information.



BIOS Item	Usage	Item-Specific Help
CPU Smart Fan Control	-Disable ★ Default -Enable	
Smart Fan Start Temperature	-50 ★ Default	Disable / Enable Smart Fan function
Smart Fan Full Speed Temperature	-50 ★ Default	

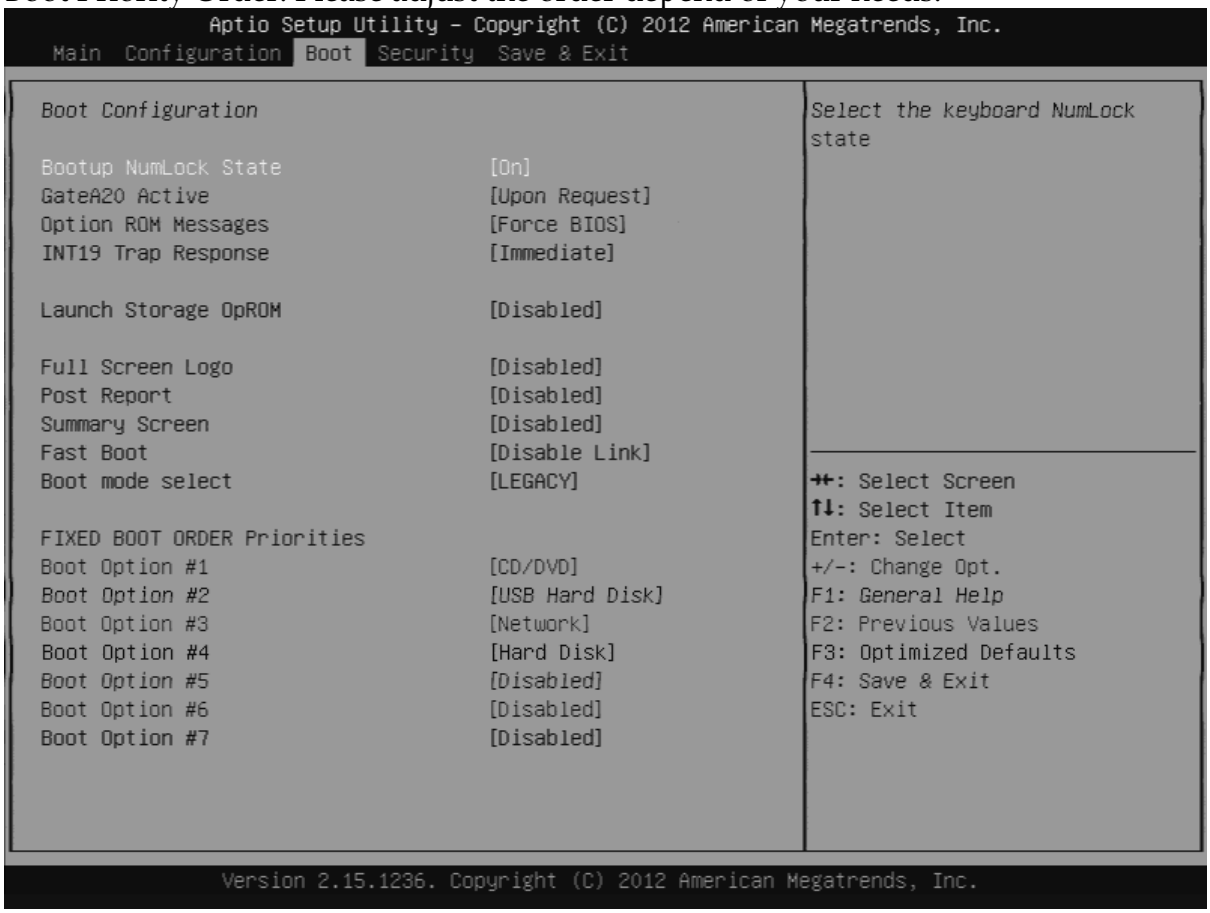
Serial Port Console Configuration

Configure console redirection on serial port.

BIOS Item	Usage	Item-Specific Help
Serial Port 1 Console Redirection	-Disabled ★ Default -Enabled	Control Console Redirection enable/disable
Console Redirection	-Disabled ★ Default -Enabled	

3.5 Boot

Boot Priority Order: Please adjust the order depend of your needs.



Boot NumLock State
Selects Power-on state for NumLock.
Choices: OFF, ON.

GateA20 Active
UPON REQUEST – GA20 can be disabled using BIOS service.
ALWAYS – do not allow disabling GA20; this option is useful when any RT code is executed above 1MB.
Choices: Upon Request, Always.

Option ROM Messages
Set Display mode for Option ROM.
This item is used to determine the display mode when an optional ROM is initialized during POST. When set to [Force BIOS], the display mode used by AMI BIOS is used. Select [Keep Current] if you want to use the display mode of optional ROM.
Choices: Force BIOS, Keep Current.

Interrupt 19 Capture
Interrupt 19 is the software interrupt that handles the boot disk function.
When "Enabled", this BIOS feature allows the ROM BIOS of these host adaptors to "capture" Interrupt 19 during the boot process so that drives attached to these adaptors can function as bootable disks. In addition, it allows you to gain access to the host adaptor's ROM setup utility, if one is available.
When "Disabled", the ROM BIOS of these host adaptors will not be able to "capture" Interrupt 19. Therefore, you will not be able to boot operating systems from any bootable disks attached to these host adaptors. Nor will you be able to gain access to their ROM setup utilities.
Choices: Disabled, Enabled.

Launch Storage OpROM
Choices: Disabled, Enabled.

Full Screen Logo
Choices: Disabled, Enabled.

Post Report
Choices: Disabled, Enabled.

Summary Screen
Choices: Disabled, Enabled.

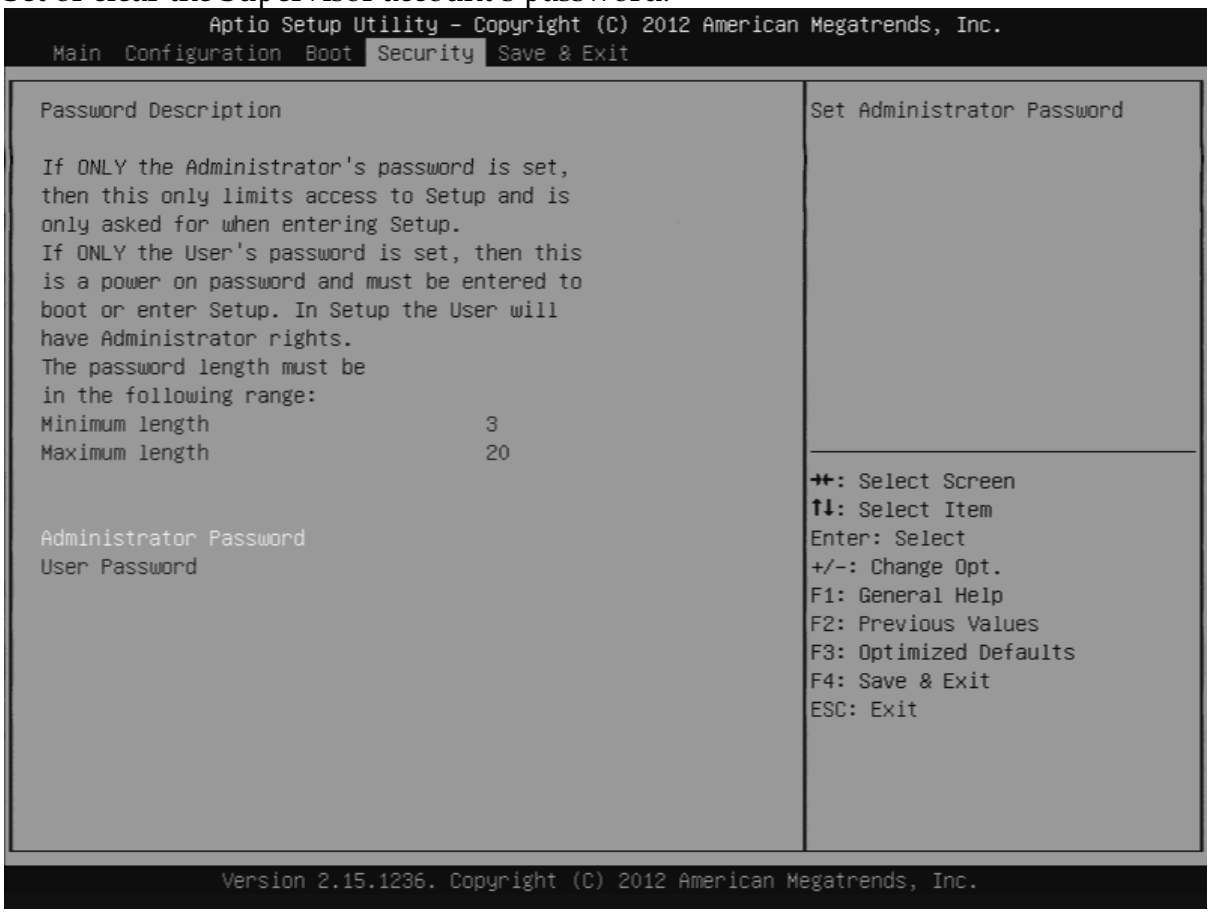
Fast Boot
Choices: Disabled link, Enabled.

Boot mode Select
Choices: LEGACY, UEFI.

Boot Option #1 ~#7
Sets the system boot order.
Choices: Built-in EFI Shell, other bootable devices, Disabled.

3.6 Security

Set or clear the Supervisor account's password.



Administrator Password

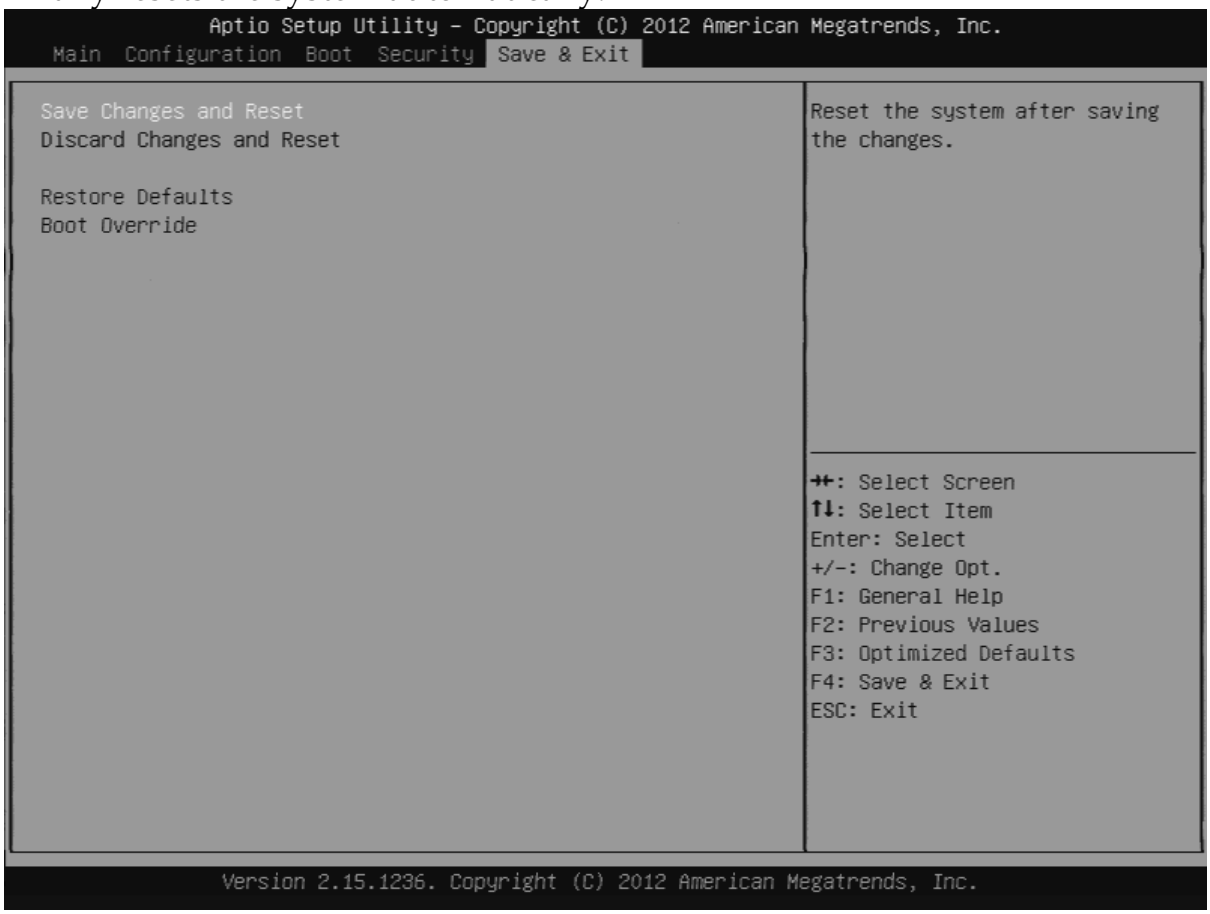
Set Setup Administrator Password

User Password

Set User password

3.7 Exit

Equal to F10, save all changes of all menu, then exit setup configure driver. Finally resets the system automatically.



Save Changes and Exit
Exit system setup after saving the changes

Discard Changes and Reset
Reset the system without saving the changes.

Restore Defaults
Restore/Load Default Values for all the setup options.

Chapter 4
Important Instructions

This chapter includes instructions which must be carefully followed when the fan-less embedded system is used.

4.1 Note on the Warranty

Due to their limited service life, parts which, by their nature, are especially subject to wear are not included in the guarantee beyond the legal stipulations.

4.2 Exclusion of Accident Liability Obligation

We shall be exempt from the statutory accident liability obligation if users fail to abide by the safety instructions.

4.3 Liability Limitations / Exemption from the Warranty Obligation

In the event of damage to the system unit caused by failure to abide by the hints in this manual and on the unit (especially the safety instructions), we shall not be required to respect the warranty even during the warranty period and shall be free from the statutory accident liability obligation.

4.4 Declaration of Conformity

EMC
CE/FCC Class A
This equipment complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
1. This equipment may not cause harmful interference.
2. This equipment must accept any interference that may cause undesired operation.
Applicable Standards:
EN 55022: 2006 + A1: 2007, Class A
EN 61000-3-2: 2006
EN 61000-3-3: 1995 + A1: 2001 + A2: 2005
EN 55024: 1998 + A1: 2001 + A2: 2003
IEC 61000-4-2: 2008
IEC 61000-4-3: 2006 + A1: 2007
IEC 61000-4-4: 2004
IEC 61000-4-5: 2005
IEC 61000-4-6: 2007
IEC 61000-4-8: 1993 + A1: 2000
IEC 61000-4-11: 2004
FCC 47 CFR Part 15 Subpart